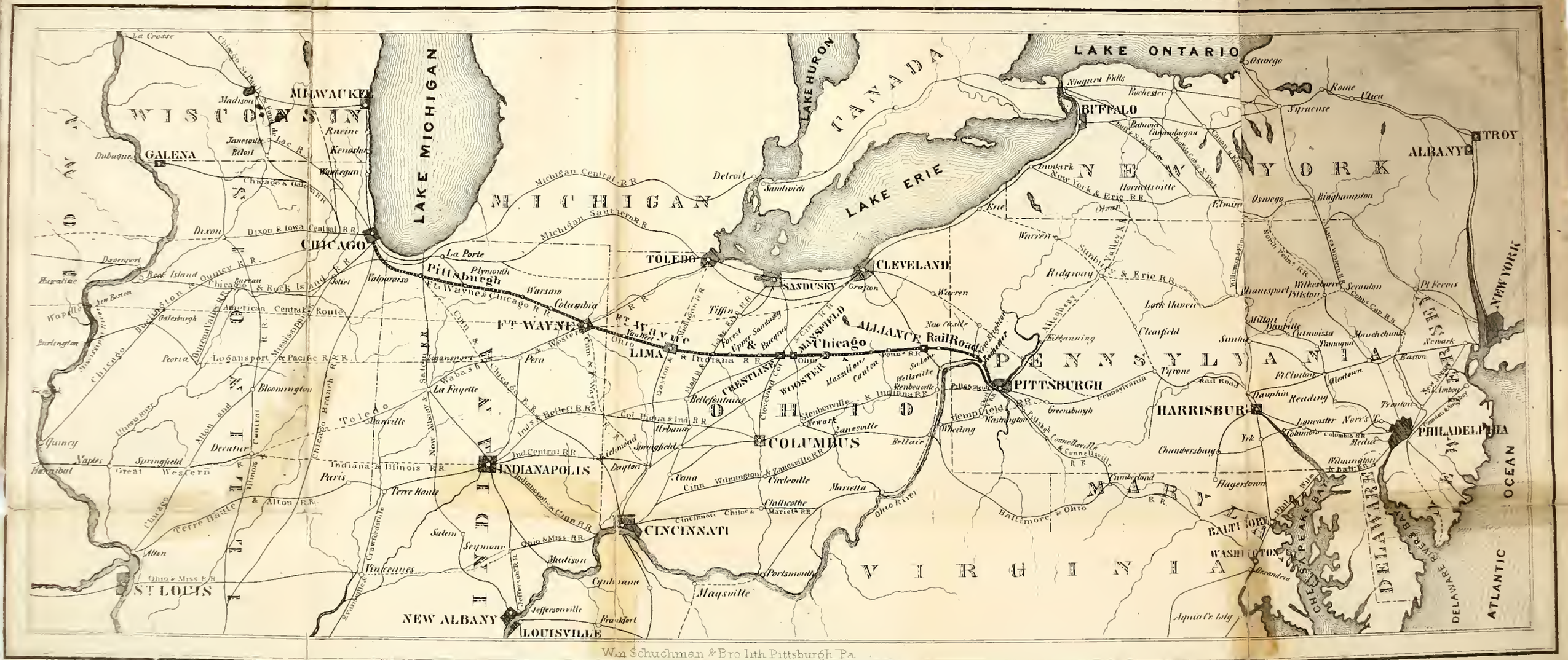
MAP OF RAIL ROADS TERMINATING IN THE CITY OF PITTSBURGH.



Wm Schuchman & Bro lith Pittsburgh Pa

PITTSBURGH AS IT IS;

OR,

FACTS AND FIGURES,

EXHIBITING THE

PAST AND PRESENT OF PITTSBURGH, ITS ADVANTAGES, RESOURCES, MANUFACTURES, AND COMMERCE.

BY

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PITTSBURGH AS IT IS.

CHAPTER I.

PITTSBURGH FROM 1753 TO 1800.

Although the traditions, and facts of the early history of Pittsburgh, are familiar to the large majority of its citizens, yet as the much greater part of the edition of this volume will be circulated at a distance from this point, it will be proper and interesting to those into whose possession the book may come, to give some portion of the facts and figures connected with the early history of this city, from the first visit of Washington, 1753, to the date of its incorporation as a Borough, 1794.

With the romance of the early settlement of this city, our volume has no affinities, although it is a field that the thought lingers upon lovingly and withdraws from reluctantly. It is to present the gradual growth of Pittsburgh from a frontier post to its present importance, that this volume is designed.

On the 24th day of November, 1753, George Washington arrived at the point of land now occupied by Pittsburgh,—upon which there was at that time in all probability not a human resident,—and makes the following mention of it in his journal: "I think it extremely well situated for a fort; as it has absolute command of both rivers. * * The rivers are each a quarter of a mile across, and run here nearly at right angles; Allegheny bearing north-east and Monongahela south-east. The former of the two is a very rapid and swift running water, the other deep and still, without any perceptible fall."

On the 17th of February, 1754, Mr. Trent arrived at the forks to meet Mr. Gist and others, for the purpose of laying the foundation of a fort.

The 17th day of April, 1754, the unfinished stockade, commanded

by Ensign Ward, and garrisoned by about forty men, was surrendered to Capt. Contrecœur, who at once proceeded to erect Fort Duquesne—now Pittsburgh.

In February, 1756, one John McKinney was taken prisoner by the Indians and imprisoned in Fort Duquesne. After being carried to Canada, from whence he made his escape to Philadelphia, he gives the following incident in his description of the Fort. "While he was at Fort Duquesne, there came up the Ohio from the Mississippi, about thirty batteaux and about one hundred and fifty men, loadened with pork, flour, brandy, peas, and Indian corn; they were three months in coming to Fort Duquesne, and came all the way up the falls without unloading."

November 24th, 1758, the French, terrified by the approach of the English under Gen. Forbes, set fire to their Magazines, Barracks, &c. burnt all their improvements to the ground, and evacuated the place in boats. The remains of Fort Duquesne were taken possession of by General Forbes, November 25th, 1758. The army was immediately employed erecting a small military work upon the east bank of the Monongahela river, capable of accommodating 200 men.

This was the first Fort Pitt; whence our city derives its name; and was completed about the 1st of January, 1759: from which date this point appears in the newspapers of the day, and in letters, to have been indiscriminately called Fort Pitt and Pittsburgh.

Of the trade at this point at that time, Smollett makes the following mention when recording the actions of Major General Stanwix, at Fort Pitt, in the winter of 1759–60. He says, "The happy consequences of these measures were soon apparent in the production of considerable trade between the natives and the *merchants of Pittsburgh.*"

In 1764, Col. John Campbell laid out a plan of lots, near the Fort, now embraced in four squares, in the city of Pittsburgh, which act may be regarded as the inception of the present city.

In September, 1766, Pittsburgh is mentioned by Rev. Charles Beaty, in his Journal, as "*some kind of a town without the Fort,*" leaving the inference that it must have been a miserable affair indeed, when there was no other description applicable.

January 5, 1769, a warrant was issued for the survey of *the Manor of Pittsburgh*, which survey was completed May, 1769, and embraced 5,766 acres.

The next record of the progress of the city of Pittsburgh, we extract from the Journal of George Washington, under date of October, 1770, when he arrived at Fort Pitt on his way to the Kanawha. He writes:

"We lodged in what is called the town, distant about 300 yards from the Fort. * * The houses, which are built of logs and ranged in streets, are on the Monongahela, and I suppose may be about twenty, and inhabited by Indian traders."

Upon this extract, Neville B. Craig, Esq. in his History of Pittsburgh, makes the following remark: "It happens singularly enough that the very first description of the point on which Pittsburgh stands, was from the pen of Washington; and the very first statement of the number of houses here is from the same pen. He estimates the number of houses at this place, out of the fort, of course, at about twenty. We have no doubt that the number was more likely to be under than over his estimate. But suppose there were twenty, and that there were six persons to a house, Pittsburgh then contained, exclusive of the garrison, one hundred and twenty persons, men, women and children."

The 23d of February, 1777, is worthy of preservation in the records of the Manufacturing and Commercial history of Pittsburgh, as the date at which, it may fairly be said, commenced that important branch of the business of Pittsburgh—boat building. On that day "fourteen carpenters and sawyers arrived at Fort Pitt from Philadelphia, and were set at work on the Monongahela, fourteen miles above the fort, near a saw mill. They built 30 large batteaux, forty feet long, nine feet wide, and thirty-two inches deep, which were intended to transport troops." *

In January, 1778, provisions were very scarce, and flour rose to $16 per barrel.

The year following, January, 1779, provisions still continued scarce, and bacon at Pittsburgh was $1 a pound.

January, 1784, the first sale of lands was made by the proprietaries of the Manor of Pittsburgh, John Penn, Jr. and John Penn, to Isaac Craig and Stephen Bayard. In June, 1784, the laying out of the town was finished.

This labor being completed, was approved by the agent of the proprietors, on the 30th of September, 1784, when it seems

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* Craig's History of Pittsburgh, p. 141.

that quite a speculative fever must have arisen, as it is said that sales immediately commenced, and many applications for lots were made as soon as the survey was completed, and before it had been traced upon paper.

In December of 1784, we find in an extract from the Journal of Arthur Lee, printed in the pages of Craig's History of Pittsburgh, the following, which may be regarded as the first record of coal mining at this point:

"The banks of the Monongahela on the west or opposite side to Pittsburgh, are steep, close to the water, and about two hundred yards high. About one-third of the way from the top is a vein of coal above one of the rocks. The coal is burnt in the town and is considered good. The property of this and of the town is in the Penns. They have lotted out the face of the hill at 30 pounds a lot, to dig coal as far in as the perpendicular falling from the summit of the bank."

Further on, the Journal mentions, "Pittsburgh is inhabited almost entirely by Scots and Irish, who live in paltry log houses." Mr. Arthur Lee, it will be as well to mention, was fresh from the Court of Versailles, whither he, with Dr. Franklin and Silas Deane, had proceeded as Commissioners, and consequently the rudeness of a frontier settlement made no favorable impression upon his fastidious tastes.

Of the commerce of the place the Journal records, "There is a great deal of small trade carried on—the goods being brought at the vast expense of forty-five shillings per cwt. from Philadelphia and Baltimore. There are in town, four Attorneys, two Doctors, and not a Priest of any persuasion, no church nor chapel. * * The place, *I believe*, will never be considerable."

About this period the town began to expand slowly, and a certain kind of manufactories were established. Isaac Craig and Stephen Bayard, who were in the mercantile business, formed a partnership with Turnbull, Marmie & Co. of Philadelphia, and in addition to their original object, added a distillery here, a saw mill up the Allegheny, and salt works some where on Big Beaver.*

On the 29th of July, 1786, the first number of the Pittsburgh Gazette was issued, being the first newspaper printed west of the Allegheny Mountains. A communication from the late Judge

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* Craig's History of Pittsburgh.

Breckenridge was published in the first number of the Gazette, "on the situation of the town of Pittsburgh," from which we make the following extract:

"The town consists at present of about an hundred houses, with buildings appurtenant; more are daily added, and for some time past it has improved with an equal but continual pace. The inhabitants, men, women and children, are about fifteen hundred."

Mr. Breckenridge has either made some mistake in the estimate of the population, or they stowed close, for his estimate gives fifteen persons to each house, which is an unprecedented average.

At the time the Pittsburgh Gazette was first issued, there was no mail to this point—all letters or correspondence of any nature being carried by special express or travelers; but in September, 1786, an order was made by the Government to establish a post from Philadelphia to Pittsburgh.

In 1786, Pittsburgh contained, according to a statement in Niles' Register, vol. 30, page 436, thirty-six log houses, one stone, one frame and five small stores. This rather conflicts with the statement of Judge Breckenridge, in his article in the first number of the Pittsburgh Gazette, where he gives an estimate of houses the same year at one hundred, and a population of fifteen hundred. The detail and the particularity with which the houses are mentioned in the statement in Niles' Register, gives it credibility, and it is supported by the account given by Dr. Hildreth, of Marietta, of the arrival of the May Flower, on the 3d of April, 1788, with a body of New England emigrants. The account, after giving a statement of the starting of the May Flower from Robbstown, now known as West Newton, the passage down the Monongahela, and the arrival at Pittsburgh, says:

"Pittsburgh then contained *four or five hundred inhabitants*, several retail stores, and a small garrison of troops was kept in old Fort Pitt. To our travelers, who had lately seen nothing but trees and rocks, with here and there a solitary hut, it seemed to be quite a large town. The houses are chiefly built of logs; but now and then one had assumed the appearance of neatness and comfort."

This was two years after Judge Breckenridge had estimated the population at fifteen hundred,—and as it agrees, allowing for the lapse of time, with the statement of Niles' Register, we are disposed to believe that in April 1788, the population of Pittsburgh was about five hundred.

Until the summer of 1788, Pittsburgh was located in Westmoreland county, but on the 24th of September, of that year, an Act of the Legislature erected the new county of Allegheny, and by the act the courts were to be held at Pittsburgh, and trustees were ordered to erect suitable buildings on the reserved tracts opposite Pittsburgh, where Allegheny now stands—but by a subsequent act the purchase of lots in Pittsburgh for Court House and Jail was authorized.

In 1789, Allegheny was laid out by order of the sovereign authorities of the State of Pennsylvania.

On the 1st of October 1790, the postages at Pittsburgh, for the year ending that date, were $110.99.

On the 22d of April, 1794, the act was passed incorporating the town of Pittsburgh into a borough.

In the winter of 1795, occurred an event that may be recorded as the beginning of that large source of revenue to Pittsburgh—the Allegheny river lumber trade. Major Craig having been informed that Cornplanter, or Gyantawachia, the celebrated Seneca Chief, had at his saw mill a large quantity of boards, an article much wanted by the public service, despatched a messenger to the Chief with orders and money to buy all his lumber; to which occurrence we shall have occasion to refer again, when we come to consider the lumber trade of Pittsburgh as it is at the present time.

The spring of 1796 is also worthy of special notice in this chapter, as the period at which the arrangements were made for the first Glass Works here—of which arrangements we shall take occasion to remark more minutely in the portion of this volume devoted to our Glass Manufactures.

The Pittsburgh Gazette of January 9th, 1796, gives the following first authentic statement of the population of the borough:

"The number of inhabitants in the borough of Pittsburgh, as taken by the assessors last week, amounts to one thousand three hundred and ninety-five."

1797–98 is memorable in the history of Pittsburgh, as the second era in its boat building interest, being the period at which two National vessels, the armed galleys, President Adams and the Senator Ross, were constructed here. Of this further mention will be made in such chapters as may contain the history and statistics of that branch of our trade.

In 1800 the census gives Pittsburgh 1,565 inhabitants.

Having traced and mentioned briefly the more important points in the steady growth of the City of Pittsburgh, up to the year 1800, from its first inception by Ensign Ward's Stockade, for the gratification and information of all such as are unacquainted with the earlier history of the city, we close the chapter to proceed to the legitimate body of the work, and endeavor to show by indisputable figures and irrefutable facts, that no point in the whole West, and probably in the United States, is so worthy the serious attention of the Capitalist, the Merchant and the Mechanic.

CHAPTER II.

WHAT CONSTITUTES PITTSBURGH.

Pittsburgh has been undervalued abroad, from her population being improperly stated in the census and other public statistics. The census gives separately the number of inhabitants in Pittsburgh, and in Allegheny City, but ignores in connection therewith, the population of our suburbs, which contain a large proportion of our citizens.

Pittsburgh in reality consists of nine distinct municipalities, viz:—The Cities of Pittsburgh and Allegheny, the Boroughs of Manchester, Duquesne, Lawrenceville, East Birmingham, Birmingham, South, and West Pittsburgh; and in the manufactures and business of Pittsburgh they all hold precisely the relation of wards.

The Manufacturer, having his factory in Birmingham, Manchester, or Allegheny, has his warehouse in Pittsburgh, and his dwelling in Lawrenceville; and the Dry Goods Jobber or wholesale Grocer, having his place of business in Pittsburgh will reside in Allegheny. The effect being the same as in other cities of having a factory in the 5th, 7th or 9th ward, an office in the 2d, and a dwelling in the 10th ward.

It is greatly to be regretted there does not exist a state of affairs that would admit of a consolidation of the two cities and the several boroughs, so that a proper rank in population would be accorded to this city.

In this volume, undertaken for the purpose of giving an exhibit of the wealth, advantages, resources, and progress of this commu-

nity, the whole is considered under the general title of Pittsburgh, so that the real magnitude of our manufactures and population will be presented undistracted by the municipal divisions, which will be used only as distinctive terms for location of factories, buildings, &c.

The area of ground covered by Pittsburgh is largely beyond any idea held of it abroad. The city extends in a straight line along the Ohio and Monongahela rivers 4½ miles; and an equal distance along the Allegheny and Ohio; and fills likewise a triangular space between the Monongahela and Allegheny, of 2½ miles base, by 3 miles on either side, embracing in all her surface, 5,376 acres of ground, through which run the waters of three rivers, spaned by six bridges. Densely built upon for 2,000 acres of that area, the suburbs are here and there unoccupied, which vacancies are yearly growing smaller, and are generally rather unimproved lots than open commons such as are usual to the suburbs of large cities.

Bewildered in the almost fabulous accounts which have been put forth from time to time, of the progress of other western cities, the Capitalists, the Merchants, and the Mechanics of the United States have taken little or no heed to the progress of Pittsburgh. Therefore with wonder visitors behold the sooty giant who stands astride the head waters of the Ohio, and with astonishment consider the promise given by its present immense powers and resources, of its future overshadowing bulk.

The compiler of this volume has undertaken it with the intention of showing fully, and clearly as possible, the growth, size, wealth, advantages and resources of the city; but he has been anxious to keep all his figures rather under than over the reality; endeavoring only to claim its rightful importance for the city, and present fairly for the consideration of those interested, its advantages and resources; not to create by assertions and suppositive figures, a mirage dissolving before an examination—preferring that the examiner into the facts shall find in all things a surplusage.

The growth of the city has been apparently slow, but its results are sound. The prevailing characteristics of the community have been to create wealth without noise.

While other western cities have been yearly making reports of their progress, and continually crying out to the merchant, the mechanic, the capitalist, here is "El Dorado," Pittsburgh has been silently, industriously, but with almost equal rapidity,

enlarging her proportions and increasing her wealth. Although we cannot but wonder at the rapidity with which, in some portions of the country, the wilderness has been converted into the abode of civilization, refinement, and great mercantile prosperity, yet in the advance of Pittsburgh there is equal ground for surprise, even if we have not in seventeen years, like Chicago, grown to our present bulk from nothing. In the one instance, for that seventeen years the voice of the country has raised a continual outcry of "speculation," "speculation," in connection with the name of that city. In every counting-house her wonderful rise, and her immense fortunes, have been topics of daily discussion; while around the hearths of the laborer and the mechanic, the story of her prosperity, and the opportunity in her environs to gain wealth, have been "as household words." In the other, no yearly balance sheet of prosperity has been scattered over the Union; and the only noisy intimation of her existence, reaching the counting-houses of other cities, has been the far-off echo of the clank and clang of her forges and rolling mills, and the puff of her steam engines.

The one has in seventeen years of uninterrupted prosperity, built fine wharves, erected huge warehouses, great hotels, elegant dwellings, and gathered a population of 110,000 inhabitants, and $97,000,000 of mortgages, and given yearly to the world, reports of its progress to its present position.

In the other case, in the same time, an awful conflagration swept out of existence $10,000,000 of her capital, while great droughts, severe frosts, and the presence of the pestilence, have seriously, at various periods, affected her business. In the last year, low water and ice has rendered her manufactures, so far as progress or profit were concerned, almost useless—so completely was the year's business by these interruptions cut off. Yet notwithstanding the drawbacks and actual losses in that time, immense manufactories have been built and kept in operation, extensive coal beds have been worked, rail roads built, hundreds of steamboats constructed, whole streets of houses erected, costly public buildings built, acres of ground covered with dwellings, and a population of 138,000 people gathered into her limits, with less than $10,000,000 of mortgages; and save the echo of her machinery, the shadow of her smoke, the presence of her steamboats upon every navigable river of the West, the presence of her manufactures in Canada, California, the north, south, east, and west of the Union, no yearly

report of her progress has greeted the eyes or the ears of the people of the country.

While we respect the position secured by Chicago, honor the enterprise of her citizens, rejoice at her prosperity, and have used her fortunes to illustrate our own, merely because of the familiarity of her name and progress to the whole country; we may be allowed to ask if her prosperity had met the same severe checks as Pittsburgh, would her present position have been attained with the same rapidity; or, had Pittsburgh, advancing as she has with equal rate of population with Chicago, escaped the blows which have fallen upon her from time to time, what would in all probability have been her population and wealth?

That those disasters have had a serious effect in checking, for at least ten years, the progress of Pittsburgh, and thereby giving other points the advantage in a comparison of increase during that past time, there can be no doubt.

The fire of 1845 destroyed $10,000,000 of property, which was said to have been replaced in eighteen months from the resources of those who were the losers by the conflagration. Is it not at once evident, that if the $10,000,000, which it took to replace the capital destroyed, had not been required thus to supply the loss, it would naturally have been used by the possessors in further extensions of the city and its business, instead of being necessarily applied to maintain the business and the city in the position they occupied the day previous to the fire? Such being the case, is it not correct to say that, to this necessity is distinctly traced all the depression which from that period has lingered over the real estate interest of our city, and placed her in an unfavorable position for comparison with other points in the advance of prices of building lots? and likewise given to many of our manufacturing interests an appearance, when all our advantages are taken into consideration, of dilatoriness of growth?

Pursuing this thought further, we may start the inquiry of what would have been the result to Pittsburgh, if the loss of the 10th of April, 1845, could have been avoided? The ten millions of capital in such a case saved, employed in manufacturing, and yielding but 10 per cent. yearly profit, would have produced, without considering the yearly produce of the profits reinvested, as would naturally be the case, the sum of twelve millions of dollars; thereby giving to our business community an additional capital of $22,000,000.

It is not necessary to point out the result of such an additional capital in active employment through the term of years which have elapsed since the spring of 1845, upon our real estate, and number and capacity of our manufactures.

It is fair to say fifty per cent. increase would in all matters pertaining to the business of the city, have been the consequence.

Pursuing yet further the results of our losses, a brief remark will not be amiss in mentioning the disasters we have sustained by low water, ice, and the pestilence.

The interruptions to business the last six or seven years, from these causes, has been that of eight seasons. It was estimated that the last season's suspension of navigation was a loss to our manufacturers of one and a half million of dollars. Multiplying that sum by the number of seasons in which, from like causes, similar losses have occurred; and let it be noticed they are all in the period in which the city was recovering from her severest commercial misfortune; and the product is another $12,000,000 of capital, which would have been undoubtedly employed in extensions of business, and consequently of the city.

If in twelve years, with a loss of $34,000,000 of capital, resulting from providential causes, the city of Pittsburgh is nearly, if not quite, equal in progress with the most progressive city of the Union, at what figure is it fair to say she would have rated, but for these misfortunes?

Taking these things into proper consideration, and the progress she has made, under all these reverses, it is just to say that, enjoying the same freedom from public misfortune as other cities from this time forward, *she will be henceforth the most accumulative and progressive City of the Union.*

CHAPTER III.

GEOGRAPHICAL POSITION.

From the time the white man first set foot in the western valleys, the geographical position of Pittsburgh has rendered it a marked point; and until the war of the Revolution severed it from any claim of ownership by European powers, its site was a subject of contention between England and France, and was regarded by the statesmen of those nations as an important position.

Pittsburgh is situated in latitude 40° 35′ north, longitude 80° 38′ west, and occupies the position of a western capital of Pennsylvania.

Located at the head waters of the Ohio, and at the junction of the Monongahela and Allegheny rivers, she commands an inland navigation of many thousands of miles.

Pittsburgh combines more geographical advantages of position than any inland city or town in the United States. Distant only from 300 to 400 miles from three of the most important seaboard cities of the Union, and but a summer day's ride from either; for the purposes of exportation or importation she possesses many of the advantages of the cities lying immediately upon the sea coast.

About 200 miles from the great chain of inland seas, to whose shores access is had in a few hours ride, she partakes of the advantages of the Lake cities for intercourse with the Canadas; and for outlet through the lake route to the ocean; while by her rivers she commands another and an easy access to the ocean and foreign nations. Thus having the choice of three avenues whereby she may export beyond the borders of the United States her manufactures, or receive the products of other countries. And if the articles demand such transportation, *unbroken water carriage from the city to the ocean through all three of the routes.*

Situated in the heart of the bituminous coal formation of the Appalachian field, and equally advantageously located as to the

deposits of iron ore, her geographical relations to the staple materials of Pennsylvania, as well as of the Union, are unequaled.

Her location to the whole extent of country bounded by the Atlantic Ocean on the east, the Gulf of Mexico on the south, the Mississippi River on the west, and the Lakes upon the north, is so nearly central, that when viewed with reference to her natural means of intercourse with the States within those boundaries, she stands in the position of a geographical centre. Describing upon an accurately proportioned map of the United States a circle, with a radius of 400 miles from Pittsburgh, it embraces therein the following States entire, and in parts: Pennsylvania, New York, Vermont, Massachusetts, Connecticut, Rhode Island, Delaware, New Jersey, Maryland, Virginia, Ohio, North Carolina, Tennessee, Kentucky, Indiana, Michigan, Canada West, part of Illinois, and the northern portion of South Carolina. This circle embraces every variety of climate, and nearly, if not quite all, the staples of the various sections of the Union; for the products, and the business of which, Pittsburgh as the centre of the circle, reaches but 400 miles on either hand.

To this extent of country the manufacturing advantages that Pittsburgh and its neighborhood possess, must always prove a magnet, attracting business and population.

Beyond her qualities as a manufacturing community, Pittsburgh possesses another attractive feature—*she is the gateway of the West.* From her situation at the head of the Ohio, such articles as have a preference for water carriage, either on account of demanding low freights, or from a desirability to be but little handled, must pass through Pittsburgh, to reach such a channel for distribution through the West.

The key point of a railway route, nearer by forty miles from New York City to the Western States, than any line of rail road now constructed, or contemplated, the travel between the eastern and western sections of the country will find its way through Pittsburgh, via the Pennsylvania Central Rail Road, and the western roads branching from Pittsburgh to all the sections of the West, North-west, and South-west; as will also such articles of commerce exchanging between the East and the West as admit of railway carriage.

Reaching through natural avenues of travel, the following States and Counties by steamboats, without transhipment of goods, no

one can, viewing in connection with our railway system these great river facilities, dispute to any extent, the propriety of allowing to Pittsburgh the title of "The gateway of the West."

By the Ohio river, from Pittsburgh to Cairo, touching every important point in Western Virginia, Southern Ohio, Northern Kentucky, Southern Indiana, and Illinois. By the Mississippi, the towns and counties bordering upon that river in Louisiana, Mississippi, Arkansas, Tennessee, Missouri, Illinois, Iowa, Wisconsin, and Minnesota. By the Missouri river, Central Missouri, Kansas, and Nebraska. By the Arkansas and White rivers, Central, Southern, and Northern Arkansas. By the Red river, Central Louisiana. By the Wabash, Central Indiana. By the Tennessee, Western Tennessee, Kentucky and Northern Alabama. By the Cumberland, interior of Kentucky, and Northern counties of Tennessee. By the Big Black and Yazoo rivers, inland Mississippi. By the Minnesota, the interior of Minnesota. By the Illinois river, the interior of Illinois. By the Muskingum river, the interior of Ohio. By the Allegheny, the Northern portion of Pennsylvania, and the South-western of New York. By the Monongahela, South-western Pennsylvania and Western Virginia.

Thus reaching by river navigation, fourteen States and two Territories—not only the border counties thereof, but the interior of those States as well, affording unparalleled facilities for reaching from the 46th degree of Northern latitude to the 30th; from the first degree to the 22d longitude West from Washington, embracing an area of country 1200 by 960 geographical miles, or 1,052,000 square miles of territory; all of which is reached in all directions by continuous river navigation from Pittsburgh.

Of this extent of country, the Ohio river passes along the borders of 6 States, watering the shores of 64 Counties, viz: 2 in Pennsylvania, 8 in Virginia, 13 in Ohio, 24 in Kentucky, 12 in Indiana, and 5 in Illinois. The Mississippi traverses the boundaries of 10 States, and gives navigation to 83 Counties, viz: 3 in Minnesota, 9 in Iowa, 3 in Wisconsin, 13 in Illinois, 15 in Missouri, 2 in Kentucky, 5 in Tennessee, 10 in Mississippi, 5 in Arkansas, and 18 in Louisiana. The Missouri washes the shores of 24 Counties in Missouri. The Tennessee gives water transportation to 3 States, and outlet to 14 Counties, viz: 3 in Alabama, 7 in Tennessee, and 5 in Kentucky. The Cumberland affords water carriage through 2 States, and to 9 Counties, viz: 5 in Tennessee

and 4 in Kentucky. The Illinois and Kaskaskia give to 24 Counties in Illinois, navigation; and the Wabash, similar privilege to 10 Counties in Indiana, and 5 in Illinois. The Arkansas affords to 12 Counties in that State, a like advantage; and the Red River, the same to 9 Counties in Louisiana. The White river gives carriage by water, to 10 Counties in Arkansas. The Yazoo, the Sun Flower, and Big Black, afford to 9 Counties in Mississippi, travel by river communication. The Hatchee and Obion the same facilities to 7 Counties in Tennessee. The Kentucky, Green, and Big Barren rivers, egress to the Ohio, to 12 Counties in Kentucky. The Osage, La Mine, Grand, and Maramec rivers, steamboat navigation to 13 Counties in Missouri. The Des Moines and Iowa rivers give to 8 Counties of Iowa, access to the Mississippi by water; and the Wisconsin, Rock, Chippewa, and Black rivers, the same facilities to 13 Counties in Wisconsin. The Allegheny gives 2 States, and 8 Counties in Pennsylvania and 2 in New York, communication by water to a market for their productions; and the Monongahela similar advantages to 2 States, and 5 Counties in Pennsylvania and 1 in Virginia—being 340 Counties to which Pittsburgh has direct communication—forming portions, as before observed, of Fourteen States and Two Territories, by the rivers named—in addition to which, there are many others unnamed.

This sketch of the inland navigation on rivers, possessed by Pittsburgh, affords a brief view of its extent. Of its present and future value, the table upon the following page, gathered from the Census of 1850, of the Counties mentioned, will give an idea.

STATISTICS

OF THE

Rivers navigable from Pittsburgh to their head waters, without transhipment of freights.

Rivers.	States.	Counties.	Population.	Cash value of Farms.	Cash value of Live Stock.	Value of Agricult'l Products
Allegheny,	Pennsylvania,	8	321,037	$ 55,527,337	$6,054,327	$ 7,256,880
	New York,	2	89,443	17,053,725	3,454,013	4,623,857
Arkansas,	Arkansas,	12	52,321	3,914,063	1,861,305	2,015,522
Big Black,	Mississippi,	4	58,301	4,288,902	1,624,775	3,824,808
Cumberla'd	Tennessee,	5	78,050	8,466,216	2,087,213	4,464,251
	Kentucky,	3	29,755	2,249,464	753,419	2,596,070
Des Moines,	Iowa,	5	51,413	4,387,670	880,149	2,039,450
Green,	Kentucky,	7	81,410	8,828,581	2,256,501	9,650,577
Grand,	Missouri,	3	17,202	1,574,407	572,759	405,988
Hatchee,	Tennessee,	7	84,245	8,331,650	2,410,136	5,446,017
Illinois,	Illinois,	18	174,192	24,249,474	5,348,188	12,748,597
Iowa,	Iowa,	3	14,368	806,719	332,163	723,372
Kaskaskia,	Illinois,	6	57,570	5,736,244	1,721,207	1,927,636
Kentucky,	Kentucky,	4	39,874	7,062,784	1,204,343	2,896,810
La Mine,	Missouri,	2	20,793	2,628,936	749,664	1,005,539
La Touche,	Louisiana,	3	30,822	14,032,926	791,400	2,913,331
Missouri,	Missouri,	24	316,812	27,460,933	4,130,256	18,156,438
Maremec,	Missouri,	3	122,927	7,590,420	752,248	1,766,717
Mononga'la	Pennsylvania,	4	157,940	39,335,716	4,621,414	6,032,000
	Virginia,	1	12,387	1,569,392	253,830	500,604
Muskingum,	Ohio,	3	103,174	15,105,568	1,736,072	3,645,962
Mississippi,	Arkansas,	5	17,977	3,541,044	633,093	1,461,556
	Iowa,	9	81,297	6,653,283	1,284,058	2,784,988
	Illinois,	13	198,516	19,642,721	4,511,841	11,921,013
	Kentucky,	2	10,187	767,608	242,184	681,064
	Louisiana,	18	281,535	45,036,179	3,890,414	11,972,806
	Missouri,	15	219,967	16,973,969	2,753,504	7,272,411
	Mississippi,	10	103,735	16,260,297	3,360,495	8,935,400
	Tennessee,	5	59,207	6,444,779	1,660,872	3,156,691
	Wisconsin,	2	18,667	823,954	222,291	326,733
Ohio,	Indiana,	12	155,961	16,749,595	2,505,265	4,799,324
	Illinois,	5	25,109	1,034,866	352,375	667,763
	Kentucky,	24	261,723	36,077,182	5,120,695	19,365,600
	Ohio,	13	448,733	64,134,326	5,899,833	15,274,843
	Pennsylvania,	2	151,281	23,284,002	1,586,398	2,692,992
	Virginia,	8	67,528	9,662,267	1,334,847	2,033,057
Osage,	Missouri,	5	22,222	1,547,492	873,811	1,101,218
Obion,	Tennessee,	2	13,999	1,322,018	471,078	877,962
Red,	Louisiana,	9	79,213	10,770,518	1,956,714	4,267,245
Rock,	Wisconsin,	5	43,206	7,381,561	1,435,507	2,118,927
Sunflower,	Mississippi,	1	8,389	3,269,875	343,405	1,190,785
Tennessee,	Kentucky,	6	52,838	2,749,888	919,023	3,000,263
	Tennessee,	6	49,191	3,172,469	1,590,950	4,608,583
	Alabama,	2	36,782	3,834,136	220,954	2,150,125
Wabash,	Illinois,	5	36,403	2,635,724	782,805	1,426,947
	Indiana,	10	123,011	16,740,250	3,148,231	6,726,714
White,	Arkansas,	10	36,224	2,597,068	1,077,590	3,374,521
Wisconsin,	Wisconsin,	6	87,398	4,166,586	954,753	1,132,292
Yazoo,	Mississippi,	6	54,079	10,531,633	1,572,235	6,154,758
		336	4,600,426	$601,312,416	$87,413,443	$218,992,007

CHAPTER IV.

MINERALOGICAL POSITION.

It is, without a doubt, to her location in the bituminous coal basin of Pennsylvania, that Pittsburgh owes her position as a manufacturing city; and, after that advantage of position, to her facilities for the reception of iron, and its distribution in a manufactured state.

Located in the north-western section of the great "Allegheny or Appalachian Coal field," frequently known as the great central bituminous coal seam, Pittsburgh has given to that portion of the coal measures from which her wants and those of the West are supplied, her own name.

Rodgers and Trego state that the seam, known as the "Great Pittsburgh Seam," is the most extensively accessible one in the Western coal measures.

McCullough estimates that the Appalachian coal field, which traverses eight States, has an area of 65,300 square miles. R. C. Taylor, Esq. in his "Statistics of Coal," says that deducting from this the unproductive areas, erosions of strata, and such coal fields as will never be reached by the miner, the workable area of the whole is 40,000 square miles, or 25,600,000 acres.

Of this bituminous coal strata, according to McCullough, Virginia has 21,000, Pennsylvania 15,000, Ohio 11,900, and Kentucky 9,000 square miles.

Pennsylvania possesses no published geological map, and consequently erroneous estimates have been made of the extent of the coal measures in this State. A report of the coal trade, in 1834, stated the extent of the coal formation in Pennsylvania, at 21,000 square miles. R. C. Taylor, Esq. however, in 1848, gives it as his opinion that the carboniferous formations of Pennsylvania, or what is usually styled coal measures, do not exceed 15,000 square miles.

The bituminous coal field lies principally west of the Allegheny

Mountains, and extends from Towanda on the north-east, to the south-west angle of the State, a distance of two hundred and seventy miles.

The "Great Seam," as it is called in most geological works, or as it is more definitely known, "The Great Pittsburgh Seam," is finely exposed at Pittsburgh, and along the Ohio and Allegheny rivers; also extending nearly the whole length of the Monongahela river. This seam has been traced through Pennsylvania into Virginia, and also into Ohio, and is from twelve to fourteen feet thick at the south-western border, from six to eight feet at Pittsburgh, and about 5 feet still further westward, in Ohio.

Of this seam, Mr. Lyell, the eminent English Geologist, says in his travels in North America, "I was truly astonished now that I had entered the hydrographical basin of the Ohio, at beholding the richness of the seams of coal which appeared every where on the flanks of the hills, and at the bottoms of the valleys, and *which are accessible in a degree I never witnessed elsewhere. The time has not yet arrived when the full value of this inexhaustible supply of cheap fuel can be appreciated.* * * To properly estimate the natural advantages of such a region, we must reflect how three great navigable rivers, such as the Monongahela, Allegheny and Ohio, intersect it, and lay open on their banks the level seams of coal. I found at Brownsville, a bed ten feet thick, of good bituminous coal, commonly called the Pittsburgh seam, breaking out in the rivers' cliffs near the water edge."

Of the capacity of the bituminous region for mining, Trego says, "In the bituminous coal fields there appear to be not less than ten separate layers or beds of coal, of sufficient capacity for mining, and which vary in thickness from three to ten feet." R. C. Taylor, in his coal statistics says, "It is possible that within the entire series, from the conglomerate upwards, ten such seams may exist; but we have not seen a position where more than half that number could be approached."

Toward the north and north-eastern side of the coal range, the seams range from three to four feet. Near Karthaus, eight coal seams have been traced, three only are workable, the largest being six feet.*

At Blossburg, and around the head of Tioga river, from three

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* Report to the Clearfield Coke and Iron Co. 1839.

to six seams occur, but not more than two have been mined, and the coals are sent by railroad to New York State.*

There are commonly four coal seams existing within the formation in the north-east extremity of the field, and it is but seldom that more than two workable beds occur in the same locality.*

At Pittsburgh the main bed of workable coal is six feet, and increases in thickness as it proceeds up the river to Brownsville, where, as mentioned before, it is estimated by Lyell at ten feet.

Extensive as is the field of bituminous coal in Pennsylvania, thus scantily dotted out in these remarks; and incalculably valuable as it is to Pittsburgh as a manufacturing city; not less valuable to her is the anthracite deposit of coal, when viewed in connection with the consumption of iron by her manufactories.

While the coal fields of Pennsylvania may be considered as leading in importance to Pittsburgh, as a manufacturing city, yet the carboniferous deposits of the surrounding States bear upon her prosperity in a greater or less degree, according to their quality and proximity.

The coal fields of Tennessee, Kentucky, Ohio and Virginia, by reason of the natural avenues of transportation and trade, stand in a supporting relation to the coal measures of Western Pennsylvania.

The area of the Tennessee coal field is 45,000 square miles, of Ohio, 44,000, and of Kentucky, 40,500. A certain portion of these in each, are iron producing regions at the present time, and will no doubt become yet more productive.

In Ohio, although the statistics of McCullough give that State an area of 40,000 square miles, Prof. W. W. Mather estimates the area undoubtedly underlaid by coal at but 12,000 square miles, of which only 5,000 contain workable veins. "The Ohio coal," says R. C. Taylor, "makes good coke, and mixed with charcoal in the production of iron, creates an increased make, equal, it is affirmed, to 33 per cent."

The Kentucky field, according to Prof. Mather's Geological Report of 1838, has an area of workable coal veins of 7,000 square miles. There are in that area several qualities of coal. The main, or Pittsburgh seam, which extends from Pittsburgh through Virginia, reaches Sandy at the boundary of the State, but does not extend into it. Taylor says that nearly all the coal brought into use in Kentucky is of the description called Cannel.

Taylor's Coal Statistics.

"The Tennessee division of the Allegheny range occupies an area of 43,000 square miles, the greater part of which consists of the elevated local group known as the Cumberland Mountains."* The quality of the coal is spoken of as excellent. An analysis of it shows that it approaches in character the semi-bituminous variety of Pennsylvania.

These three States, from reason of their production of iron—a portion of which comes to Pittsburgh for a market—must always in their mineral productions, be important auxiliaries to the manufactures of Pittsburgh.

Not less to the iron deposits which surround this locality, than to her coal, is Pittsburgh indebted for her past, and dependent for her future. Cheapness of fuel, in the larger proportion of cases, justifies a transportation of mineral to the locality of the fuel; but where the transportation of mineral is necessary but for short distances, and by easy artificial and available natural channels, the combination of cheapness of fuel, with great supplies of mineral immediately at hand, constitutes the locality which must become, and always be, a great manufacturing centre. These two requisites Pittsburgh has.

Having briefly sketched the coal fields surrounding the locality of Pittsburgh, we also spare a few paragraphs to an equally brief description of the ore field from which she has drawn, and is to draw, her supplies of iron.

Throughout the counties embraced in the bituminous coal region, are to be found extensive beds of iron ore, and equally large deposits in the counties east of, and lying along the bases of the Allegheny Mountains. The Allegheny river affords a cheap channel for the supply of iron from the counties lying upon that river, and the Monongahela, for the iron from the neighborhood of the Youghiogheny and Cheat rivers. The Pennsylvania Canal, and the Pennsylvania Central Rail Road, for the metal of the interior and mountain counties. In the Allegheny river region, there are five counties and about fifty furnaces, whose product finds in this city a market; the region drained by the Pennsylvania Canal and the Pennsylvania Central Rail Road, contains nearly as many more, whose product, in part or wholly, is sold in this vicinity. These two regions have been so fully opened up, that the quality and extent of their metal are well understood; and need no des-

* Taylor's Coal Statistics.

cription here. Of the iron of the Youghiogheny region, Prof. Ducatell, in a Report to the Maryland Legislature, 1833, says:

"On the Youghiogheny, Iron ore of the best quality, and in great abundance, is found. It is of the variety described by mineralogists under the specific head of argillaceous oxyd of iron."

The deposits of iron thus favorably described, have been but little worked as yet, although there are some six or eight furnaces in that region. The opening of the Connellsville Rail Road, and the increasing demand for metal, will undoubtedly soon attract capital to that locality. To the westward of this point, there are in blast, in Eastern Ohio, and in Mercer county of this State, many furnaces, whose number is yearly increasing, which look to Pittsburgh for a market, and whose metal is transported here by water carriage.

The furnaces of Kentucky, Tennessee, and the central river counties of Ohio, also send their metal here for sale; and a portion of it is considered a choice article. It will be noticed that in iron, as in coal, Pittsburgh is centrally situated to the products of four States, and that she is in her own State immediately surrounded by vast deposits of that mineral; while in all instances, a cheap water carriage is available for the transportation of it to the fuel.

What has been the natural effect of such a mineralogical position upon the past of Pittsburgh; and what will be its effect upon her future; it is hardly necessary to inquire.

Important as may have been her position at the head waters of the Ohio; and as a supplier of merchandise to the country along the waters of the Allegheny, Monongahela, and a portion of the Ohio; and of the counties situated along the western bases of the Allegheny mountains, before the age of rail roads;—and prominent as may have been that position under the circumstances then existing: yet it is apparent that, to her manufactures she is indebted for the importance which has enabled her not only to hold her position as an important market for the last seventeen years, but also to increase in a wonderful ratio.

The two substances, coal and iron, are always, when rendered available, the basis of great and permanent commercial and manufacturing wealth. Spreading a map of the nations of the earth before us, we at once perceive that those in which exist extensive deposits of these two, at first glance unattractive substances, are among the wealthiest, as well as most powerful nations of the

world; and that upon and around these formations, the most flourishing populations are concentrated. "Coal" says Vischers, "is now the indispensable aliment of industry. * * It is to industry what oxygen is to the lungs—water to the plant—nourishment to the animal." Says Elett, "This is essentially the age of commerce and of steam, the foundations of which are our coal mines. In the machine shop and factory, on the rail road and canal, on the rivers and ocean, it is *steam* that is henceforth to perform labor, overcome resistance, and vanquish space. There was no appreciable iron trade anterior to the introduction of the steam engine, an instrument of power deriving its efficiency almost entirely from *coal.*"

The connection of the past of Pittsburgh with the coal deposits of Pennsylvania, so rich and so easily mined, is too plain to need comment. Coal has been the life of the steam engine, and the steam engine has been the great power which has called into existence our manufactures. On the future of Pittsburgh, as connected with her two minerals, we have no need to expatiate. Her past progress, under the influences of coal and iron, indicates her future.

"The employment of the combustible mineral, COAL, in the smelting of iron, has emancipated the iron manufactory. Henceforth the mineral comes to seek the fuel.

"Coal is the most essential agent of industry. The foundry, the iron, constitute merely the instruments, the elements of riches."*

"The occurrence of iron ore associated with coal has been considered the most prolific source of commercial prosperity possessed by Great Britain. Her political economists have long been accustomed to ascribe the extent of her manufactories to the abundance and cheapness of both these substances, by which are furnished, not only fuel for working the steam engines which put in operation their machinery, but the material also for constructing the machinery."†

"Of all the physical circumstances which have contributed to our extraordinary progress in manufactures and industry, none have so much influence as our possession of valuable coal mines."‡

"Since the invention of the steam engine, coal has become of the highest importance as a moving power, and no nation, however favorably situated in other respects, not plentifully supplied

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*Bulletin de la Commission Centerale de Statisque Bruxelles, 1843.

† Ducatell's Report to Maryland Legislature, 1833

‡ McCullough's Statistics of English Manufactures.

with this mineral, need hope to rival those that are, in most branches of manufactures."*

"Our coal mines have conferred a thousand times more real advantages upon us than we have reaped from the conquest of the Mogul Empire, or than we should have reaped from the conquests of Mexico and Peru."*

The remarks of the various writers we have quoted, are overwhelmingly forcible in their application to Pittsburgh. It needs no drawing of inferences to sustain how powerfully the past of other localities of coal and of iron foretell the future of Pittsburgh.

When these two substances, as in the location of Pittsburgh, combine with natural and artificial advantages, of great availability and extent for the distribution of their products, as well as easy, cheap, and rapid means of concentration at the manufacturing point of the raw material, can it be a subject of hesitancy to decide upon the employment of capital in manufactures at this point? Says an authority we have already quoted, "Production, which outstrips all local necessities, urgently demands new outlets. Embarrassment no longer attaches to production; the trouble rests henceforth with distribution."†

Possessed of a river navigation of many thousands of miles, reaching thereby nearly 400 *counties, with their millions of population: penetrating by these avenues into* 15 *States of the Union: commanding three distinct avenues of access by water to the ocean: the terminus of an extensive rail road system, spreading its iron net work over eight States, and reaching hundreds of inland cities and towns, otherwise unapproachable, excepting by the stage coach and road wagon: Pittsburgh laughs at the last sentence of our quotation, "The trouble rests henceforth with the distribution."*

Proof, in her past, of the quotation from the same authority, that "henceforth the mineral comes to seek the fuel:" Sustained in her expectancies of the future by the experiences of the past of the cities and towns of other coal formations; triumphant in her geographical position over the troubles of distribution; what city, what locality, offers such bright features for examination by the capitalist, the merchant, the mechanic, the laborer? What point presents greater inducements to labor, to skill, to ability and to capital?

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* M'Cullough's Statistics of English Manufactures.

† Commission Centrale de Statisque, Bruxelles, 1843.

CHAPTER V.

NATURAL AND ARTIFICIAL TRANSPORTATION ADVANTAGES.

In a previous chapter we have stated that the transportation advantages of Pittsburgh were not surpassed by those of any other city or point in the United States. To the support of this observation, we name briefly the natural and artificial channels for distributing the products of our manufactories. Considered in the proper order, the rivers are the first in rank. At the risk of a little reiteration, we enumerate them, and present in tabular form the length, value by population, &c.

TABLE showing principal Rivers navigable from Pittsburgh without transhipment, giving length navigable, &c.

Rivers.	States pass'd.	Counties.	Miles navig'e	Population.	Value of Agr'l Products.
Allegheny,	2	10	248	408,427	$ 11,980,747
Arkansas,	1	12	622	52,321	2,015,522
Big Black,	1	4	60	58,301	3,824,808
Cumberland,	2	8	203	107,805	7,060,321
Des Moines,	1	5	200	51,413	2,039,450
Green,	1	7	165	81,410	9,650,577
Grand,	1	3	100	17,202	405,988
Hatchee,	1	7	75	84,245	5,446,017
Illinois,	1	18	302	174,192	12,748,597
Iowa,	1	3	80	14,368	723,372
Kaskaskia,	1	6	150	57,570	1,927,636
Kentucky,	1	4	105	39,874	2,896,810
La Mine,	1	2	30	20,793	1,005,539
La Fouche,	1	3	60	30,822	2,913,331
Missouri,	1	24	2,575	316,812	18,156,438
Maremec,	1	3	60	122,972	1,766,717
Monongahela,	2	5	56	170,327	6,532,604
Muskingum,	1	3	80	103,174	3,645,962
Mississippi,	9	80	2,000	991,087	48,512,662
Ohio,	6	56	1,008	1,110,335	44,833,579
Osage,	1	5	200	22,222	1,101,218
Obion,	1	2	60	13,999	877,962
Red,	1	9	620	79,213	4,267,245
Rock,	1	5	225	43,206	2,118,927
Sun Flower,	1	1	80	8,329	1,190,785
Tennessee,	3	14	280	138,711	9,759,971
Wabash,	2	15	369	159,414	8,253 661
White,	1	10	439	36,224	3,374,521
Wisconsin,	1	6	160	87,398	1,132,292
Yazoo,	1	6	300	54,079	6,154,758
Total,	15	336	11,212	4,527,025	$218,992,007

In addition to these there are many others, of whose navigable length we have no survey.

The means which are next in rank are the rail roads of the Pittsburgh rail system. Of these there are nine, viz: Pennsylvania Central, Pittsburgh, Fort Wayne and Chicago, Pittsburgh and Connellsville, Pittsburgh and Steubenville, Cleveland and Pittsburgh, Allegheny Valley, Chartiers Valley, Pittsburgh and Erie, and Cleveland and Mahoning.

Of these, three seek western connections and termini. Three have northern termini, and one a south-west, one a north-eastern, and one an eastern terminus. Of these there are two completed. The Pennsylvania Central Rail Road, running in the straightest possible line allowed by the formation of the country, from Pittsburgh to Philadelphia. The Pittsburgh, Ft. Wayne and Chicago Rail Road, running in almost an air line from Pittsburgh to Chicago. The Cleveland and Pittsburgh, running regular trains from Pittsburgh to Cleveland, also to Wheeling and Belle Air. The Pittsburgh and Connellsville, completed to Connellsville, and running daily trains to that point. The Allegheny Valley, completed to Kittanning, to which place the cars run daily. Of the uncompleted, the Pittsburgh and Steubenville road is nearly to completion point, and will be transacting a regular freight and passenger business inside of a year.

Canals are also among the means of transportation extensively available to this city; and although in these days of fast traveling they are much overlooked, yet in their peculiar ability, are equally important with the river and the rail road.

By her canals, Pittsburgh is enabled to transport to the lakes those heavy articles produced in her manufactories, which demand cheap in preference to rapid transportation. 1st. By the Beaver and Erie canal, from Rochester to Erie, 136 miles. 2d. By the Ohio canal, from Portsmouth on the Ohio, to Cleveland, 309 miles. 3d. By the Pennsylvania canal and its branches, she has access to the Atlantic sea board, and the interior of Pennsylvania, and a portion of New York, allowing the transportation of her minerals and her productions at a low rate, into the Eastern cities.

CHAPTER VI.

THE PITTSBURGH RAIL-WAY SYSTEM.

By a reference to the map it will be seen that the Pittsburgh Rail Road system is, taking into view the scope of its connections, one of unsurpassed value.

Reaching eastward, by the PENNSYLVANIA RAIL ROAD, to Philadelphia, it attaches to New York and the North-east by the New Jersey Rail Roads, and to Baltimore and the south, by the Baltimore and Susquehanna Rail Road, which connects with the Pennsylvania Central at Harrisburg. Creating a nearer route to the North-west, through the Pittsburgh, Fort Wayne and Chicago Rail Road, by forty miles, than any route now in operation, or projected.

Westward, by the PITTSBURGH, FT. WAYNE AND CHICAGO RAIL ROAD, to Chicago, a distance of 466 miles, it embraces in its connections the entire net-work of roads which cover the States of Ohio, Indiana and Illinois, and by various projected, chartered and initiated roads, through the States of Missouri and Iowa.

Westward again, by the PITTSBURGH AND STEUBENVILLE RAIL ROAD, through another and distinct route, which forms a different connection with the roads of Ohio, Indiana and Illinois, affording through them, a direct route to St. Louis from New York, 140 miles shorter than it is by way of Buffalo and Cleveland, according to the report of its chief engineer for 1857.

The CHARTIERS VALLEY RAIL ROAD is, if the consolidation with the Hempfield and the Marietta and Cincinnati Roads is consummated, an equally important route to the city; forming, as it will in that connection, a third direct route to the West and St. Louis, and draining the southern tier of counties in the States of Ohio, Indiana and Illinois. This route gains additional value by the opportunity which it gives, the Pittsburgh and Maysville Road being built, of direct rail road access through Kentucky and Tennessee, and a connection with the rail roads of those States

debouching on the Mississippi at Memphis. The value, to Pittsburgh, of such a route as that mentioned, in connection with the Pittsburgh and Maysville Road, and to the South-west, to which it would give valuable rail privileges, and short routes to the East, is one hardly yet considered by those interested, and its development belongs to that prosperous future which awaits the Smoky City.

Southward, by the PITTSBURGH AND CONNELLSVILLE RAIL ROAD, now completed to Connellsville, and finding its terminus at Cumberland, Maryland, on the Baltimore and Ohio Rail Road; and through it, and roads now building to that point, a valuable connection with the roads of the south-eastern Atlantic coast.

The value of a direct communication between Pittsburgh and so important a seaboard city as Baltimore, need not be pointed out. It is of itself suggestive. Neither is it necessary to dwell upon the importance of the connection thus made with the southern Atlantic States. The road, when completed, will bring Baltimore 31 miles nearer the Ohio river, (a great desideratum to heavy freights,) than she now is placed by her Baltimore and Ohio Rail Road route to Wheeling; and from the character of the route of this road, having but one summit, the gradients are all level or descending eastwardly and westwardly; therefore it will attract travel and freights by its ability, from these causes, to carry cheap.

North-eastwardly, by the ALLEGHENY VALLEY RAIL ROAD, which completed to Kittanning, seeks connections with New York roads at Olean. When completed to Olean, the Genessee Canal, the Rochester and Pittsburgh, and the Attica and Allegany Roads will make connections with it at that point. The value of these connections, a glance at a rail road map will at once show.

Northwardly, by the CLEVELAND AND PITTSBURGH ROAD, now completed from Cleveland to Rochester, from whence it is using the Pittsburgh, Fort Wayne and Chicago track to the city—the Pittsburgh rail-way system reaches the Lakes, and by the steam boat routes on them, with which this work forms close connections, the rail roads of Chicago and Detroit, and thence westwardly. As a northern route this one is extremely valuable to Pittsburgh; affording an outlet to a vast expanse of country for her coal and her manufactured products, of all of which their is an increasing transportation over this route, and a growing demand in the country reached by this road and its connections. Its western

connections, which are with the various roads of Ohio, are also important to the city of Pittsburgh.

The CLEVELAND AND MAHONING ROAD, now constructing, penetrates through a very wealthy section of Ohio, known as the Western Reserve, and furnishes another route to Cleveland and the Lakes.

The PITTSBURGH AND ERIE RAIL ROAD forms a direct northern connection with Erie and the Lakes, and runs through a rich mineral and agricultural country.

These two last mentioned roads will make their termini, in all probability, at the very important inland town of New Castle, in Lawrence county, of this State, from whence, they make continuation to this city, by what may be termed a tenth Pittsburgh road, running from New Castle to Darlington, on the Pittsburgh, Ft. Wayne and Chicago road, a distance of 13 miles, and known as the PITTSBURGH AND DARLINGTON RAIL ROAD.

The extent and value of this system of roads cannot but be apparent at a glance, and also, that when completed, it will contain seven trunk roads.

Of the Western trunk routes, the PITTSBURGH, FT. WAYNE AND CHICAGO, being completed and transacting a heavy and yearly increasing business, deserves the first mention, and exhibition of the value of its route and connections. Having for its termini the great rail road centres, Pittsburgh and Chicago, its character is that of a trunk line from the seaboard to the North West. In its route it passes through and into the territory of four populous States, and gives transportation facilities to 18 counties.

The value of this trunk route is shown by the following Table:

States.	Counties	Population of 1850.	Value of Farms in 1850.	Value of Live Stock, 1850.	Bus. Grain produced in 1850.
Pennsylvania,	3	185,758	$27,911,454	$ 3,132,504	3,147,687
Ohio,	12	259,883	54,663,632	10,832,488	10.212,588
Indiana,	8	59,219	7,246,140	1,484,104	12,259,749
Illinois,	1	53,385	2,694,523	388,416	1,102,477
Total,	24	558,245	$92,515,749	$15,837,512	26,722,501

The connection of the road from Crestline, Ohio, to Alton, Illinois, is a valuable one, by the Indiana and Bellefontaine, and the Terre Haute and Alton routes, as shown by the following table:

States.	Counties.	Population in 1850.	Cash val. of Farms in 1850.	Value of Live Stock in 1850.	Bus. Grain produced in 1850.
Ohio,	5	65,154	$10,364,975	$ 734,831	3,308,997
Indiana,	9	128,168	17,409.593	2,288,923	6,913,829
Illinois,	6	66,927	7,658,543	2,077,852	5,991,229
Total,	20	260,249	$35,433,111	$5,101,606	16,214,055

From Fort Wayne, it makes a second trunk connection to the Mississippi river, at Alton. The value of which is shown in this third Table.

States.	Count's.	Population. 1850.	Cash Value of Farms. 1850.	Value Live Stock. 1850.	Bushels of Grain. 1850.
Indiana,	8	112,972	$15,223,884	$2,126,061	6,833,741
Illinois,	7	60,519	6,789,148	1,711,488	5,777,615
Total,	15	173,491	$22,013,032	$3,837,549	12,611,356

A third connection which it makes, is from Crestline to Cincinnati, by the Cleveland, Columbus and Cincinnati road to Cincinnati, traversing 8 counties with a population of 338,418, and a cash value of farms, of $56,875,778, a value of live stock of $5,192,941, and producing 14,578,421 bushels of grain.

It also receives its share of the business concentrated at Chicago, by that system of rail roads, which in 1856, was represented by 3,350,000 passengers, and by $17,343,242.23 of earnings.

By its trunk route and the three direct connections described, it drains a total of 55 counties, with a population in 1850, of 1,320,303, and producing 70,124,443 bushels of grain—having a value of live stock amounting to $29,969,618, and farms to amount of $166,737,720.

In addition to these, there are many short connections in the same range laid down in these routes, which run through populous counties, whose statistics must be passed, as the space devoted to an exhibition of the value of the Pittsburgh, Ft. Wayne and Chicago road to Pittsburgh, is already overrun.

The working statistics of this road, from November 30, 1855, to October 31, 1856, were as follows:

The number Through tons Freight West, was,.... 99,224
" " " " " East, " 111,889
" " Tons carried one mile West, " 12,850,272
" " " " " East, " 7,230,000
" " of Passengers transported, Way and Through, was..... 472,578

The earnings for the year were,

From Passengers,..... .....$761,577.56
" Freight,..... 654,542.26
" Mails, &c..... 62,368.94 —— $1,478,428.75

In the above statement of transportation and carriage, the three-fourths of the figures are those of the road before its consolidation, and of the business from Pittsburgh to Crestline only—being for 187 miles out of 466.

The other two routes, which will in due time become Pittsburgh Western trunk roads, are not yet completed. To show, however, the future value of those routes, they are sketched in the same brief manner.

1st. The PITTSBURGH AND STEUBENVILLE RAIL ROAD, by its connections, through the Indiana and Steubenville road to Columbus and the Indiana roads, will afford facilities to the following counties:

States.	Co's.	Population. 1850.	Value of Farms. 1850.	Value Live Stock. 1850.	Bushels Grain, 1850.
Pennsylvania,.....	2	182,229	$ 33,322,466	$ 2,583,972	4,274,880
Virginia,.....	1	5,054	1,279,368	233,067	248,314
Ohio,.....	8	133,250	26,259.576	3,304,929	9,894,289
Indiana,.....	10	298,847	62,038,499	7,652,392	15.288,948
Illinois,.....	7	60,519	6,789,148	1,711,488	5,777,615
Total.....	28	679,899	$129,689,057	$15,485,858	33,484,046

2d. The CHARTIERS VALLEY RAIL ROAD, forming the consolidation mentioned in a foregoing portion of this chapter, will, under the title of the Ohio Valley, in traversing to Cincinnati, pass counties, populations and products, as shown by the annexed table:

States.	Co's.	Population, 1850.	Cash value Farms, 1850.	Value of Live Stock, 1850.	Bushels of Grain. 1850.
Pennsylvania, ...	2	182,229	$33,322,466	$2,258,982	4,274,880
Virginia,.....	1	18,006	1,982.654	194,662	354,346
Ohio,.....	9	240,497	39,913,214	4,698,811	14,342,329
Total,.....	12	440,732	$75,218,334	$7,152,455	18,971,555

The most important connection which will be made by this trunk line, is that with the Pittsburgh and Maysville Rail Road, and through that, with the interior counties of Kentucky and Tennessee, and the Mississippi river at Memphis. Its comparative value is not shown in this chapter, owing to want of information of exact route, &c. That the connection must, whenever it is made, prove extremely valuable to Pittsburgh, admits of no doubt; giving her as it does, access to the whole South-West, its wants and its productions.

The Southern trunk road is the PITTSBURGH AND CONNELLSVILLE. On the general value of this road as a connecting link, giving access to the South-eastern States, we have remarked in another portion of this article. The value of its immediate route, taken from the census of 1850, the subjoined table shows:

States.	Co's.	Population.	Cash Value Farms.	Cash Val. Live Stock	Bush. Grain Produced.
Maryland,.....	1	22,769	$ 2,519,858	$ 270,070	388,415
Pennsylvania,.....	5	276,595	45,735,015	4,568,491	7,838,387
Total,.....	6	299,364	$48,254,873	$4,838,561	8,226,802

The counties through which this road passes, are mineral in their character; teeming with coal and iron, which much enhance the value of the route to Pittsburgh, by giving easy access to large deposits of those staples which are the source of her strength. Between the cities of Pittsburgh and Cumberland, the two termini of this road, the distance is 147 miles, and at Cumberland a connection is made with tide water, by the Chesapeake and Ohio canal; thus making, with the exception of the 147 miles rail way, another water communication through Pittsburgh, between the East and the West.

The CLEVELAND AND PITTSBURGH RAIL ROAD, whose advantages as a Northern route are mentioned in this chapter, some pages back, is a valuable member of the Pittsburgh system. This road, in its direct route from Pittsburgh to Cleveland, traverses 2 States and 5 counties, having a population of 199,892 in 1850, with a value of farms, of $36,862,484,—of live stock, of $4,015,377,—producing 6,455,813 bushels of grain.

The earnings of this road, ending November 1855, were $581,877.89, of which $350,799.09 were derived from freights, $204,041.34 from passengers. For the year ending November, 1856, the earnings were over $653,000.

The transportation of Pittsburgh manufactures over this road, has been yearly increasing—demonstrating the value of this outlet, by the increased traffic in the region which it penetrates, to Pittsburgh.

There were transported in four years, of Pittsburgh Manufactures, as follows:

In 1852,	7,943	Tons.
" 1853,	14,461	"
" 1854,	20,938	"
" 1855,	28,937	"
" 1856,	over 30,000	"

Of these there were forwarded from Cleveland, by vessel, across the lakes,

In 1854,	5,007	Tons.
" 1855,	17,000	"
" 1856,	over 21,000	"

Within the year 1857, this road has completed its connection with the Central Ohio Rail Road, at Belle Air, 4½ miles below Wheeling, and the Steubenville and Indiana, at Steubenville, thereby affording short routes to Cincinnati and the South-west.

The outlet to the lake region, which this road will give to Pittsburgh coal, is of itself sufficient to characterize it as peculiarly valuable to this community. Extensive arrangements are being made to ship heavy amounts of Pittsburgh coal over this route this year to the lakes, to Canada, and to New York.

The ALLEGHENY VALLEY RAIL ROAD, running through the rich mineral and lumber region from which it derives its title, is the sixth trunk road of the Pittsburgh system. It is completed to Kittanning, a distance of 44 miles. When finished, it will have many and valuable connections.

In its direct route, it passes through 7 counties, with a population of 130,635 in 1850; and by the same census, having farms to amount of $21,177,675—live stock valued at $3,026,246, and raising 4,469,005 bushels of grain and 400,000 pounds of wool.

In the absence of any later document than the Census of 1850, we cannot show the full value of this road, from the products of the counties through which it passes; but dividing, as it does, one of the most important supporting districts of Pittsburgh, it is a line which must ultimately become very valuable to this city, which will be its chief outlet for the heavy freights that will arise from the vast

deposits of iron ore, salt, coal, and the great forests of valuable timber which are spread, from one end to the other, of the Allegheny valley.

There are, in three of the counties through which this road passes, over forty furnaces, for the production of iron, whose capacity, in 1850, was about 60,000 tons. Two of the counties now contain over thirty salt works, producing more than 70,000 barrels of salt a year.

The immense freight which this road will deposit in Pittsburgh, from the minerals and productions of the region through which it runs, is apparent to all who are in any degree familiar with the mineral and lumber resources of the "Valley." The character which this road will assume, when completed to the New York line, our space will not permit us to exhibit—beyond saying that its connections will give it command of the counties of South-western New York, and that it will form a third route, connecting Pittsburgh with the Atlantic seaboard.

The earnings of this road for the year ending January 30th, 1857, over its completed portion of road, 44 miles, were $77,581.91, of which, $20,224.35 were derived from freights, and $53,705.44 from passengers.

Number of Way and Through Passengers was,..... 69,243
Tons of Freight carried one mile, were,..... 266,358

The seventh trunk belonging to this great outstretch of roads, is that admirably constructed one, the PENNSYLVANIA CENTRAL, having its termini at Philadelphia and at Pittsburgh. This line, by its connection at Pittsburgh with the Pittsburgh, Ft. Wayne and Chicago road, and its connections, creates the shortest known route between the East and the North-west, by 40 miles, as before mentioned.

The chief engineer of the Pittsburgh and Steubenville rail road, in the report for 1857, states, that when that road is completed and its business connections made between its Western terminus and the western roads, the route from New York to St. Louis, over the Pennsylvania Central road to Pittsburgh, and thence by the Pittsburgh and Steubenville rail road, will be 140 miles shorter than by any other route.

These simple statements of distances gained by the use of this road, are sufficient to show its value to Pittsburgh, as a passenger route; and under the unceasing demand of freights for low carriage, are equally determinate as to its value as a shipping channel, from the lower rates, consequent on the smaller number of miles of transportation.

As it is natural for both freight and travel to seek the shortest and least expensive routes; and this being, by the saving of distance, both

it is reasonable to suppose that the travel and freight from and to the East, to and from that portion of the West which we have shown as laid under contribution by the Western roads of our system, will pass through Pittsburgh and over the Pennsylvania Central road. The quantity of country thus drained by the Western roads into Pittsburgh, and consequently into the Central road, consists of 104 counties, with a population, in 1850, of 3,012,972, having then, farms valued at $439,926,577, and live stock, at $55,787,917, and raising 124,585,139 bushels of grain.

There is also concentrated at Pittsburgh, a river navigation of nearly 11,000 miles, giving transportation to 336 counties, which in 1850, had a population of 4,600,426, and a value of farming lands, of $601,312,416, producing an amount of agricultural articles worth $218,992,007, and having $87,312,416 in live stock. To all these the Central road offers the inducement of the shortest route East.

In this view, the value of this seventh member of the Pittsburgh rail system is heavy, from the influence it must exercise in rendering the city a great point for shipment of articles exchanging between the two sections of the Union.

The tonnage of this road for 1856, was,

From Pittsburgh to Philadelphia, Through,.....	177,415,403
" Philadelphia to Pittsburgh, "	152,903,718
The number of passengers transported over the road during the year 1856, was.....	1,646,914
The earnings of the road for 1856, were,.....	$4,720,193.71
From Passengers,.. .....$1,325,081.39	
" Freights,..... 3,244,291.51	
" Miscellaneous Receipts,..... 150,820.81	

With this brief exposition of the routes of seven of the nine roads of the Pittsburgh rail way system, we pause. In it we have not taken into account many unfinished and proposed routes; nor followed the lines laid down beyond their natural termini and unavoidable connections.

There are but few roads in the West not seeking an Eastern connection, and a short consideration of a complete map of the Western roads, shows how naturally they are all reaching for the head waters of the Ohio. An examination of the East and South-east will show that the roads of those sections of the country are also converging to the same point. The position thus presented of Pittsburgh, as a rail way centre, suggests at once a greatness, growing with the wants and productions of the greater portion of the Union.

CHAPTER VII.

POPULATION OF PITTSBURGH.

Frugality and industry are prominent characteristics of the inhabitants of Pittsburgh; consequently, a large amount of conservatism is observable in all their transactions.

The reputation abroad of its merchants and manufacturers for solvency, is the result, not only of their industry, and their wealth, but of the conservative element in their business transactions; an element which has enabled them to withstand general misfortunes in business, with a firmness and ability, which there are few communities can equal; and has, in her manufacturing career, built up a foundation of remarkable solidity, for the future commercial and manufacturing operations of the city to rest upon.

The industry of its population is not surpassed by that of any other city; and there is, for all the wealth of its population, fewer gentlemen of leisure, than in any city of the Union.

There are at the present time, but few, if any families, in which the male members are not engaged in some occupation, from day to day—of either a professional, mercantile or mechanical character; and there could not be pointed out half a dozen men of wealth, who, themselves, or their sons, lead the life of leisure which is usually led by persons equally wealthy, in other cities of the Union.

In the wealth of her population, Pittsburgh would probably compare unfavorably with the large eastern cities, as to the number of persons usually termed millionaires, implying the possession of $500,000 or over. Yet, in point of persons who may be considered independent, and those possessing handsome fortunes and competencies, there is in all possibility no other city, for the same population, can compare favorably with Pittsburgh.

The wealth of the city is generally distributed—a result of the frugality and industry before mentioned, as well as of the opportunities here, for the accumulation of money. When it is known that the chartered banking capital of the city *is only about four millions*, it must be apparent to all, that to carry on the heavy business transacted in

this city—there must be, not only large amounts of private capital, but a very general distribution of it, throughout the business community.

The population of Pittsburgh, is at the present time 138,000, even leaving out precincts which might be truthfully classified in the city, and the indications are, that a steady increase is going on.

There are many towns whose growth seems to have been more rapid than Pittsburgh, and probably for a short period has been so; yet, viewing the increase of Pittsburgh, for a series of years, we find there has been, in the swell of population, a progress which from its quietness has attracted but little attention, and is in its comparative ratio with the growth of other points, undervalued by even her own citizens.

The early growth of Pittsburgh was slow; the cloud over the Penn title, the foreign tenure of Louisiana, and other like causes, had a great effect in retarding her progress. A statement of the various censuses of Pittsburgh from 1800, could not be more appropriately commenced, than with an extract from a rare volume, entitled "An Historical Review of North America; containing a geographical, political and natural history of the British and other European settlements, the United and Apochryphal States, and a general state of the times, &c., &c. By a gentleman immediately returned from a tour of that continent. Printed at Dublin, Ireland, 1789." Says the volume:

"Pittsburgh is a neat, handsome town, containing about four hundred houses; it is situated at the confluence of the Allegheny and Monongahela rivers. It is expected this town will in a few years, become the emporium of the western country." Comparing this statement with others which we have, of the appearance and size of the town in 1786, we should judge it to be an overestimate. At that period, Judge Breckenridge gives the population at 1,500, and 100 houses. Niles' Register, the same year, states that—"there are in Pittsburgh, 36 log houses, one stone, one frame, and five small stores." Dr. Hildreth states—"that in 1788, Pittsburgh contained 400 or 500 inhabitants, several retail stores, and a garrison of troops. That at least two of these records of the early population of Pittsburgh, were guess-work, the following extract from the *Gazette* of January 9, 1796, ten years later, proves. Says the *Gazette:* "The number of inhabitants in the borough of Pittsburgh, as taken by the assessors last week, amounts to 1,395."

From this period we have authentic returns of the population; and the following table shows its increase from 1800 to 1840:

Year.	Stores.	Houses.	Inhabitants.
1800	—	—	1,565
1807	50	707	4,740
1810	—	641	4,768
1813	—	958	5,748
1817	109	1,403	7,000
1820	—	—	7,248
1830	—	—	16,988
1836	250	4,500	..cstimated 30,000
1840	—	—	38,931

From 1817 to 1825 the city was at a stand still, from effects produced by the termination of the war of 1812. In 1817 many factories stopped, and until 1821 there was a continual downward tendency in all business and property. In 1821 the distress appeared to have reached its height; manufactories, trade and industry were all prostrated. "In May of that year the price of flour was one dollar per barrel; boards were two dollars a thousand feet; whiskey, fifteen cents a gallon; sheep and calves, one dollar per head. It required a bushel and a half of wheat to buy a pound of coffee—and twelve barrels of flour to purchase a yard of superfine broad cloth."*

In 1825 and 1826, the city began to rally, and in 1830, she was again prospering. In 1837 she was with other cities retarded by the subsidence of the land speculation fever, and the panic. It will, however, be observed that notwithstanding these adverse years, that from 1820 to 1830 there was an increase equal to 135 per cent. or 13½ per cent. a year; and that from 1830 to 1840, an increase of 129 per cent. or nearly 13 per cent. a year.

From 1840 to 1845 were prosperous years, and the city increased rapidly in business and population. In 1845 Pittsburgh experienced another severe check, by the great fire of 10th of April—which, beyond a doubt, retarded its progress in population and business to an extent, incalculable, otherwise than by the figures given in relation to this subject, in Chapter III of this volume. The city, however, continued to increase, even under the weight of that loss of capital, and other things consequent, as the following table will show:

	Population.	Increase in ten years from 1830.	Increase in ten years from 1840.
1840	38,931	21,943	—
1850	79,873	—	40,942
1857	138,534	estimated at same rate of increase, of previous 10 years.	

*Lyford's Western Address Directory.

The population which this gives for the nine municipalities, which we consider as forming the community of Pittsburgh, shows a surprising rate of increase. The number would be yet larger, if there were taken into account the populations of Minersville, East Pittsburgh, Oakland, Mt. Washington, Tinkersville, Woodville, Hatfield, &c. &c., all of which immediately join the line, and are in reality portions of the city—the streets of which are continuous into those precincts, and are dotted along the whole distance with buildings as thickly as is usual in the suburbs of large cities.

Pursuing the course usually taken in the census reports of the various western cities, where every family within five miles circuit is counted, the families in these suburbs should be properly counted as part of the population of Pittsburgh. The more justly as they are all within twenty-five minutes walk of the heart of the city, and are the homes of merchants, mechanics, and laborers, whose daily occupation is in the city. Consistent, however, with the principle with which this volume was commenced, of being under instead of over the figures, we leave out of the census the inhabitants of the seven suburbs we have particularized, and some others, and state the population of this community, for 1857, at the figures given in the table. That there has been a very rapid, although quiet, increase going on in the city in the past few years, is evident, not only from those figures, but from the fact mentioned previously, that there are but few comfortable, decently-situated houses for rent here, and a demand for more—and this also, in the face of the retirement of numbers of our merchants to country residences along the lines of rail roads, and a quite large emigration from this city to the new territories and western states.

The following table shows the increase of Pittsburgh as compared with four of the principal cities of the West, from 1840 to 1857.

POPULATIONS.

Year.	Chicago.	Cincinnati.	Louisville.	St. Louis.	Pittsburgh.
1840,.....	4,470	46,338	21,210	16,469	38,931
1850,.....	29,963	115,435	43,194	80,598	79,873
1857,.....	110,000	200,000	85,000	140,000	138,534

The populations for 1840 and 1850 are taken from the census and corrected by the statistical publications of those cities issued since. Those of 1857 are from reports published in the papers. Pittsburgh,

embracing the eight or nine suburbs omitted in the calculation set down in the table, which so immediately join the city that there is no intermediate space, would have, calculating from the same data, a population of about 141,000.

A statement made in a publication of the Cincinnati Chamber of Commerce, 1855, estimates that the population of Pittsburgh in 1860, at the average rate of increase for fifty years, will be 172,000. We have given the data on which the calculations of the population of Pittsburgh are made, and it will be seen that we have kept within the limits warranted by the figures. The calculations of the report of the Cincinnati Chamber of Commerce, before referred to, make the average increase of Pittsburgh, each decade for fifty years, 122 per cent.

CHAPTER VIII.

CLIMATE AND HEALTH.

Situated seven hundred and fifty feet above the level of the ocean, two hundred miles from its tide marshes, one hundred and eighty feet above the level of Lake Erie, and more than one hundred miles from its south-west coast, the position of Pittsburgh is peculiarly a healthy one. "Although nearly surrounded by hills more than four hundred feet in height, the valleys of the Allegheny and Ohio are open to free ventilation by the north-east and north-west winds. The summer winds from the south which visit other western cities, from low and paludal grounds, here descend upon the town from a terrace of four hundred and fifty feet, after passing for a long distance over a well-drained, cultivated, broken and mountainous region."*

The average temperature during the winter months, taking the results of the observations for 1856, made by W. W. Wilson, Esq., is 21° above zero. During the spring months, 46°. During the summer months, 71°. During the autumn months, 51°.

The greatest heats usually occur in July, and the extreme cold in January. The winter does not generally set in with severity until the latter part of December; and in the average of seasons, the moderate temperatures of spring begin about the middle of February. Vege-

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* Craig's History of Pittsburgh, p. 307.

tation comes rapidly forward in the latter portion of March and April; but there is almost, invariably, frost about the 10th of May; fires are not usually dispensed with, however, until the 1st of June. The autumn is a delicious season in this vicinity. From the 1st of September, when usually the nights and mornings become slightly cool, until the last of November, a period of delightful weather prevails, with a clear serene atmosphere—which acquires that peculiar hazy appearance, about the middle of October, usual to that pleasant season known as the Indian summer. During the winter months the wind is generally from the north-west, and during rain storms, and damp weather, from the north-east. In the summer months the pleasant south-western winds prevail—changing to south-easternly currents during rains.

If it were not for the coal smoke, which is to strangers more objectionable than natives, there is not a pleasanter location in the United States. The scenery, which along the three rivers is highly romantic and picturesque in its character, is highly diversified by plain, mountain and valley; and the nature of the site upon which Pittsburgh is built is such that a walk of fifteen minutes from the business centre of the city, will bring the pedestrian out upon high table ground, from two to three hundred feet above the level of the city, and clear of its smoke—affording the most picturesque sites for residences that could be wished—and of which large numbers of our inhabitants have already availed themselves. The smoke necessarily arising from its hundreds of manufactories, and the thousands of bushels of coal which are daily consumed by private families, pervades the atmosphere to a large extent—but this smoke, according to the report of the late Dr. Meyers, formerly physician to the Marine Hospital of this city, is from the carbon, sulphur and iodine, contained in it, highly favorable to lung and cutaneous diseases. The smoke is also *anti-miasmatic*, hence the few cases of remittent and intermittent fevers. "Strangers with weak lungs for a while find their lungs aggravated by the smoke; but, nevertheless, asthmatic patients have found relief in breathing it. In this account, coal is our creditor; in another way, its abundance, cheapness and consequent general and profuse use by the poorest inhabitants, is undoubtedly a great cause of our superior healthfulness. The low fevers so prevalent in the large cities among the poor during a hard winter, and the ague and fever so common in the eastern counties where wood is scarce, are here in a measure prevented by the universal practice of keeping good coal

fires late in the spring and early in the autumn, and indeed at all seasons when the weather is damp or inclement."*

Says the same authority we have just quoted—"Of all the great western towns, Pittsburgh is the farthest removed from the baneful exhalations of the swampy borders of the Mississippi, and accordingly enjoys a greater exemption from those diseases which during the summer and autumn months prevail even as high as Cincinnati. * * * Dropsies, dysenteries, diarrhœas and cholera diseases, which are influenced by causes of a malarious origin, have never prevailed to any extent. * * * In comparison with eastern cities, there is much less pulmonary consumption, less scrofula, and less disease of the skin. There is scarcely any fever and ague, and no yellow fever. In comparison with western cities, including Cincinnati, there is less bilious fever, less fever and ague, less cholera infantum, and far less malignant cholera. We are the intermediate link of disease as well as of commerce. We have less hepatic disease than the West, and less pulmonic disease than the East. * * * On the whole, with regard to the health of Pittsburgh, it may be said that no city in the Union is more healthy, and none better resists the malarious diseases, to which, during the autumn, the whole great valley is more or less subject. Indeed, of the adjacent country, including Western Pennsylvania, it may be said that no part of the United States is better suited to a European constitution, and that the greater part will bear no comparison with it in point of salubrity."

There is no city in the United States so healthy as Pittsburgh, and it is extremely problematical if there is a healthier or as healthy a city in the world.

The following tables, compiled from various authorities, and averaged from reports of several years, exhibit the health of Pittsburgh in comparison with other cities of the United States and Europe.

HEALTH OF PITTSBURGH

In comparison with thirty-two American and European Cities.

Pittsburgh, average 5 years, including 1 year cholera,...1 in 99

CITIES OF UNITED STATES.

Buffalo,.....1 in 56
Philadelphia, average 5 years,.....1 in 42
Charleston, average 2 years,.....1 in 41
Boston, average 6 years,.....1 in 41
Baltimore, average 5 years,.....1 in 40

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*Dr. Wm. H. Denny, in Craig's History of Pittsburgh.

Cincinnati, Cist's average .....1 in 35
New York, average 6 years,.....1 in 31
Chicago, average 8 years,.....1 in 29
St. Louis, average 2 years,.....1 in 24

EUROPEAN CITIES.

Glasgow, Scotland,.....1 in 44
Geneva, Switzerland,.....1 in 43
London, England,.....1 in 40
St. Petersburgh, Russia, ...1 in 37
Birmingham, England,.....1 in 37
Leeds, England,.....1 in 37
Leghorn, Italy,.....1 in 35
Berlin, Prussia,.....1 in 34
Paris, France,.....1 in 33
Sheffield, England,.....1 in 33
Lyons, France,.....1 in 32
Barcelona, Spain,.....1 in 32
Strasburgh, Germany,.....1 in 32
Nice, Italy,.....1 in 31
Palermo, Sicily,.....1 in 31
Manchester, England,.....1 in 30
Madrid, Spain,.....1 in 29
Naples, Italy,.....1 in 28
Brussels, Belgium,.....1 in 26
Rome, Italy,.....1 in 24
Amsterdam, Holland,.....1 in 24
Vienna, Austria,.....1 in 23
Edinburgh, Scotland,.....1 in 22

HEALTH OF PITTSBURGH

In comparison with eleven manufacturing cities.

Pittsburgh, Pennsylvania,.....1 in 99
Philadelphia, Pennsylvania,.....1 in 42
Cincinnati, Ohio,.....1 in 35
St. Louis, Missouri,.....1 in 24
Glasgow, Scotland,.....1 in 44
Birmingham, England,.....1 in 37
Leeds, England,.....1 in 37
Sheffield, England,.....1 in 33
Berlin, Prussia,.....1 in 34
Lyons, France,.....1 in 32
Manchester, England,.....1 in 30
Brussels, Belgium,.....1 in 26

CHAPTER IX.

MANUFACTURING ADVANTAGES.

By reference to the chapter of this volume treating of the geographical position of Pittsburgh, it will be observed that, in the very important requisite of natural and cheap channels for the distribution of productions, Pittsburgh is possessed of remarkable advantages. A similar reference to the exhibition of the Pittsburgh rail way system will show, that in her artificial avenues for distribution, there is an equal superiority of position. By that reference it will be observed that through her natural channels, she reaches from her own site, an extent of country embracing more than 1,000,000 square miles, over which she has unlimited powers for distributing her manufactures to the populous cities, growing towns, and thriving villages, which are profusely located throughout it; and that by her rail road system, she possesses almost equal facilities for distribution.

After the power of distribution, the next point which attracts the attention of the observant person, is the position which Pittsburgh occupies for the easy reception of the staple materials of the country. By the Pennsylvania Central rail road, the Pennsylvania canal and branches, the Beaver canal, the Pittsburgh and Connellsville rail road, the Allegheny Valley rail road, and the Allegheny and Monongahela rivers, Pittsburgh penetrates into the entire iron regions of Pennsylvania, in every direction.

By a report of the Convention of Iron Masters, published in 1850, it is stated that there were then 298 furnaces in the State, and 6 bloomeries—being a total of 304; whose capacity was 550,959 tons. The same report remarks, that there are but eight counties out of the sixty-two in the State, incapable of the production of iron. To this vast amount of material, Pittsburgh has full access; and as already specified, great facilities for the transportation of the mineral from those furnaces to her rolling mills and foundries. In addition to the Pennsylvania ore deposits, which are but just beginning to be developed, she has equal facilities for receiving the products of the eastern Ohio iron furnaces, by transportation over the Pittsburgh, Ft. Wayne and Chicago, the Pittsburgh and Cleveland, and the Pittsburgh and Steuben-

ville rail roads, the Beaver and Erie Canal, and the Ohio river. The Ohio river gives also cheap facilities for receiving the products of the Tennessee and Kentucky furnaces. The Allegheny river and the Allegheny Valley rail road, penetrating one of the finest wooded districts in the country, give to Pittsburgh enviable facilities for cheap transportation from that district, of such timber as the various manufactures in wood which have and may arise, demand; while for foreign woods, the Pennsylvania canal, the Pennsylvania Central rail road, connecting with the eastern seaboard, and the Chesapeake and Ohio canal, connecting, by the Pittsburgh and Connellsville rail road to this city, with the south-eastern sea-coast, afford a fine transportation in such quantities as may be required. For wool, hemp, cotton, and in fact any of the staples of the various sections of the Union, the exhibit which is already given of our rivers and our railways, shows how readily they can be laid down in Pittsburgh, and how cheaply. After the facilities for the distribution of productions, and the receptions of material, the next important quality in creating and continuing a great manufacturing city, is fuel.

There is no point combining as Pittsburgh does, the two first necessary advantages, that possesses the last in so valuable a shape. Other cities may find within reachable distance, coal of a good quality, and in large quantities; yet the advantage remains with Pittsburgh, from the easy access which is had to it, and the consequent cheapness of the article. To manufacture in Pittsburgh there need be, from the location of the coal strata, and the advantageous sites for factories at this point, little or no cost for the transportation of fuel. The coal lies in the hills from one to two hundred feet above the bottom lands, on which the factories being located, the coal can be sent down by cars directly into the yards thereof. On the left bank of the Monongahela, the coal lies 200 feet above the level of the river bank, and is in a number of instances sent down into the mills and foundries in the manner described, in which cases the cost of fuel is only about eighty cents per ton, of 2,240 pounds. Where from any cause the factory is located in such a manner that advantage cannot be taken of these unparalleled facilities for fuel, the cost of coal delivered in the yards of the mills, foundries, &c. is only from $1.31 to $1.50 per ton; and contracts have been made at $1.16 and $1.20. There is a large extent of ground suitable for all descriptions of manufactories, where, as previously stated, coal can be sent down into the yards at a cost not above $1.00 per ton, of twenty-eight bushels, and down to eighty cents. In any article which requires for its manufacture large quantities of fuel, the great advantage gained by this easy obtainance of fuel, and

the almost nominal cost per bushel or ton, is decisive as to the superiority of this point, for its production.

This advantage of fuel, without the ability to distribute widely and cheaply, and to receive raw materials from a distance easily and cheaply, would of course be in itself, isolated from the other two, of little or no value; nor would they without the other, be of the same force or value; but such a combination of these three, as exists at Pittsburgh is, beyond disputation, unsurpassed—perhaps unparalleled.

The quality of the coal of the Pittsburgh seam is so well understood by all manufacturers, that descriptions of its adaptations would be almost superfluous. The following table, however, presenting a few results from various analyses which have been made, is given in order that a comparison can more readily be instituted as to Pittsburgh and other western cities, in the one item of manufacturing—fuel.

	Carbon	Volatile matter.	Ashes.	Pounds of Steam at 212° per cubic foot.	Specific gravity.	Weight of cubic y'd, pounds.
PENNSYLVANIA.						
Pittsburgh,.....	60.14	36.46	3.40	384.1	1,265	2,134
Somerset Co.*.....	69.73	19.50	10.68	410.9	1,382	2,332
Mercer Co.....	57.80	40.50	1.70	370.0	1,275	
Venango Co.....	49.80	43.20	7.00	350.0		
Beaver Co.....	30.12	36.00	38.88	195.0		
VIRGINIA.						
Wheeling,.....	52.03	44.04	3.93	362.0	1,230	2,075
Kenawha Salines,.....	51.60	47.10	2.30	332.0	1,250	2,109
KENTUCKY.						
Breckenridge,†.....	27.16	64.29	8.47			
Henderson,.....	54.29	42.56	3.15			
Hawsville,†	47.00	46.00	7.00	299.0	1,250	2,106
Caseyville, ...	44,49	31.82	23.69	286.0	1,392	2,347
Bell's Seam,.....	60.14	36.46	3.40	384.0		
OHIO.						
Pomeroy,.....	47.72	39.29	12.90	305.0	1,357	2,313
INDIANA.						
Cannelton,†.....	59.47	36.59	3.49	348.8		
Rockport,.....	45.00			292.0		
MISSOURI.						
Calloway,‡.....	40.83	40.05	13,12			

The value of coal as a fuel, or as a generator of steam, depends very essentially upon the quantity of fixed carbon, which it contains. As a general rule, in the manufacture of iron, the quantity of coal is necessarily augmented, in the same ratio that the yield of carbon is

* This Coal will in a short time come into the Pittsburgh market, via the Pittsburgh and Connellsville rail road, which passes through the county.

† Cannel Coal.

‡ Above St. Louis, and Cannel Coal.

diminished. The same is the case where the manufacture of glass is concerned, and in fact wherever heat is a requisite in manufacturing.

The advantage which the possession of this quality of coal gives to Pittsburgh, does not stop at the simple possession; but continues in the additional cost which the necessity for that coal, obtainable, as will be seen from the table, only from Pittsburgh, entails upon manufacturers at points below.

The fuel which costs the Pittsburgh manufacturer, from 80 cents to $1.50 per ton of 2,240 lbs., or 28 bushels, costs the manufacturer in the down river towns and cities, from $2.80 to $3.50 for the same quantity; being a difference, taking the average, of $2 per ton.

The advantage which this gives to Pittsburgh in the carrying on of a rolling mill, for instance, is best shown by the following calculations:

A rolling mill of 20 puddling and 11 heating furnaces, and 25 nail machines, will consume, running double turn, about 850,000 bushels, or 34,000 tons of coal in a year; running single turn, about 525,000 bushels, or 20,000 tons a year. The additional cost to a rolling mill, running double turn, in Cincinnati, Louisville, or St. Louis, would be, at $2 a ton advance on the Pittsburgh cost, $68,000. A mill of the capacity named will turn out about 14,000 tons of manufactured iron; the difference in price of fuel creating an advantage of nearly $5 per ton to the Pittsburgh manufacturer. The same advantage arising from fuel, will be the result in all manufactures where it is a prominent requisite.

This estimated advantage is only as stated in years favorable for the transportation of coal from Pittsburgh to the ports below. When dry summers and severe winters interrupt the navigation of the Ohio, as was the case in 1855 and 1856, manufacturers below must expect to pay much heavier rates, and then the advantage to Pittsburgh manufacturers is proportionably greater. During the coal famine of the fall and winter of 1856 and 1857, those manufactories whose stocks ran out, were obliged to pay from 30 cents to 50 cents per bushel for coal, or stop their works. Where contracts requiring fulfillment in a specified time were completing in their workshops, the price was necessarily given; in other cases the works were thrown idle; in either case, at a serious loss. In the one instance the articles were manufactured at a cost, taking the lowest compulsory price, over the Pittsburgh cost equal to $15.62 on the ton of pig iron. In the other instance, a loss equal, each month, to 10 per cent. in time, and ½ per cent. upon the interest of the capital was sustained for whatever period the works were idle from the want of fuel. That this state of

affairs will not occur frequently there is no guarantee, and the only preventive adoptable by the down river manufacturers, is to stock, when it is plenty, sufficient coal to last a year. This would in itself require such an outlay of capital, that the cure would be nearly as troublesome as the disease. These contingencies of fuel, the manufacturer in Pittsburgh is free from; he can have his coal in the dryest summer, or the severest winter, at the same cost as in the favorable seasons.

Loss from want of metal is also a result which the down river manufacturer is liable to, from the same cause which enhances the price of his fuel, and renders his supply of it uncertain.

An occurrence of this character did, in the winter of 1856–'57, cripple a large down river manufacturing community—which, although supplied with fuel, was destitute of metal. In that particular, as well as in the supply of fuel, Pittsburgh is independent of the variations of the seasons.

Following those great essentials, reception of material, distribution of products, and cheapness of fuel, comes cheapness and eligibility of sites for manufactories.

In this essential Pittsburgh presents, from the low price of real estate, as shown in the chapter treating thereof, great advantages. Locations for building, combining the requisites of space, water, transportation facilities, and the best of those advantages already mentioned for obtaining fuel, are to be had in every direction around the two cities and the suburbs, at very low prices, and on accommodating terms. Closely connected with this advantage are the low rates for warehouse rents, in comparison with other cities. In Cincinnati, for instance, the rent of a warehouse on the levee, twenty-five feet by two hundred, would be about $3,000. In Pittsburgh, the same sized house rents from $1,000 to $1,200. In the same proportions are the rents for dwelling houses. It is fair to say that the difference in dwelling house and warehouse rents is $3,000 a year, in favor of the Pittsburgh manufacturer, over one located in one of the larger cities below this point, and correspondingly in other sections of the Union.

Yet another advantage is the cheapness with which workmen can live in this city in comparison with other points. The details of the cost of living to the mechanic, the merchant, and the laborer, we leave to their proper chapter; to which a reference will show that in the expense of living, fuel costs but about one-third as much as at Cincinnati, Louisville, or St. Louis. Rents are only one-half as much. A majority of the articles for food are one-third less than at those points;

while all articles of wearing apparel, or the material for them, can be purchased as cheaply as in Philadelphia or New York.

The fact that all species of labor in our manufactories is from ten to 20 per cent. less than at manufacturing points below—and that workmen, in most instances, prefer to labor here at less prices, is conclusive as to the difference in household expenses.

In this consideration the article of fuel claims again, prominence; not so much from its price in ordinary seasons, although then one dollar will go as far as three elsewhere; but, from extraordinary seasons, like that of the fall and winter of 1856–57, when a fuel famine prevailed in all the great towns of the Ohio valley, at New Orleans and other points upon the Mississippi. While at Cincinnati, Louisville, &c. coal was commanding fifty cents per bushel, and for a time none to be had, even at that rate, at Pittsburgh the price was unchanged, and the supply plenty at the usual rates for supplying households, from five and a half to six cents. Human knowledge or foresight gives no data as to when a dry summer or a severe winter may be expected; and to the laboring classes, averaging one dollar per day, or the mechanical classes, averaging two dollars per day, a location where the comfort of their firesides is superior to the variations of the seasons, is of great importance. While to the mercantile, manufacturing, and more remunerative professions of all classes, the increased cost of fuel from a severe winter, is a matter of comparative indifference; yet to the laboring and mechanical classes who are unable to lay in large supplies, but must replenish from time to time, their winter's fuel, such contingencies of fuel as in 1856–57 made demands upon their purses, are ones to be avoided; and that is why, in the consideration of cost of living to workmen in Pittsburgh, the price and uninterrupted supply of fuel possesses great interest and importance.

In intimate connexion with the advantages belonging to Pittsburgh, from cheapness of living, is the salubrity of the location. The table of mortality given in another chapter treating upon this subject, is conclusive of the superiority on this point, of this community; and without doubt, the great health shown by those tables to be possessed by this manufacturing population, weighs heavily in the summing up of the advantages of this location as a manufacturing point. Not only to the workman, is the health of his family and of himself of importance, but to the manufacturer, as well. The loss of income caused by three or four weeks sickness suffered by the workman, whose recompense for twelve hours' severe toil is from one to two dollars—or by the

increased demands upon it from frequent illness in his family, is seriously felt, in the consequent deprivation of comforts, which the money lost from lost time, and necessarily expended in drugs and doctors' bills, would purchase. The lessening of such misfortunes is an object in the selection of his place of toil. To the manufacturer, whose profits often depend upon the skilled and unbroken labor of a set of hands, the loss from the forced substitution of green hands for competent ones, or the ragged running of his machinery, from the forced depletion of his working force by illness, is also, especially if occurring when his order books are full, a great injury, not only to his profits, but to the smooth working of his business. To the employer, therefore, as well as the employee, is the healthfulness of a location a subject of careful consideration; and there is no point, as statistics show, in the United States, possessed of all or any of the requisites for supporting a manufacturing community, which can in any way compare with Pittsburgh, for salubrity.

From this brief sketch of some of the manufacturing advantages of Pittsburgh, it is apparent that there are three advantages of cheapness—those of fuel, material and living; three of position—those of reception, distribution, and manufacturing sites; three of health—unbroken labor, lessened expenses, and increased income.

The cost of manufacturing, from these advantages and many others of a minor character, is so lessened in Pittsburgh, that it may safely be called the cheapest point of the United States for the manufacturing of most articles, especially those in which iron, wood, cotton, wool and fuel are important components.

A writer in "Rees' Encyclopedia," at an early date, in mentioning the advantage of this location, says—"The cotton of the Ohio and Mississippi, the hemp of Kentucky, the ore of the vast iron district, near Pittsburgh, the abundance of material for glass, will undoubtedly lead the people of that place to rival Manchester in cotton goods, Birmingham in iron, Russia in hemp, and Germany in glass." Two of these specified rivalships are accomplished.

Among the powers used in manufacturing, that of steam is pre-eminent, and its advantage being in proportion to its cost, its value is great or small over other kinds of power according to its cheapness. At Pittsburgh so cheap is the article of fuel, that steam becomes the prevalent power. Its cost, at this point, is given in an estimate in the Report of the United States Engineers upon the establishment of a National Foundry, in 1823, as follows:

The total cost *of four engines* working 313 days would be—

160 bushels of coal a day,....at 3 cts.	$ 4.80,	or	$1,502.40
Oil, per day,.....	40	"	125.20
Packing four times each, 16 times,..at	1.75	"	28.00
4 Engineers,.....at	400.00	"	1,600.00
			$3,255.60

Or equal to $813.90 for each engine.

The same report, comparing steam and water power, states that "there were employed in Pittsburgh at that date, fourteen engines from twenty to eighty horse power, whose powers exceeded that of the whole extent of the Muskingum, with a head of eight feet."

The cost of material for the erection of the various species of manufactures is so low at this point, that a desirable advantage is gained here from the reduced cost of building. All such component parts of manufactories, as wood, brick, glass and iron, are cheap, and labor is reasonable, in fact low in comparison with some other points.

Lumber is worth from $15 to $30 per thousand feet; shingles, $3 per thousand; glass, 12 by 20, sixty lights to the 100 feet, $6.50 per 100 feet; bricks, $4 per thousand; castings are worth from $50 to $60 per ton; forged iron work about $140 per ton; lime, 16 cents per bushel; white lead, $2.50 per keg of 25 lbs.; planed flooring, $22 per thousand; sash averages 7½ cents a light; doors, $3 each; tin, ⅛ X $12 per box; sheet copper, 36 cents per lb.; brass castings, 37½ cts. per lb.; bar iron, $65 per ton; sheet iron, $130 per ton; nails, $3 to $6 a keg of 100 lbs.; spikes, $4 to $5 a keg of 100 lbs.; slating, with copper nails, $10 to $11 per square of ten feet.

The chapter treating of mechanics' wages furnishes data for estimates of the expense for mechanical and manual labor in erecting buildings in this vicinity, and the capitalist or manufacturer can from those and the data already given, at once discern the extent of the advantage gained in Pittsburgh by facilities and cheapness for erection of buildings.

There are in Pittsburgh abundant openings for manufacturing enterprises, which will not fail to be highly remunerative if properly conducted. There is business and demand for more manufactories—in iron, glass, wood, cotton, wool, and in fact every staple of the country; and for the capitalist and mechanic, there is no point in the Union where skill and money can be more profitably employed than at Pittsburgh.

To the capitalists desirous of investing money, the mechanic of

employing skill, and the merchant of exerting ability, a closer and personal examination into the subjects treated of in these chapters, will be undoubtedly advantageous. To Eastern men, who may contemplate a jaunt to the West, we would suggest a halt at Pittsburgh of a few days, in their route. Even those who have no desire to change their location or to seek investments, will find much here that will instruct, amuse and surprise.

CHAPTER X.

REAL ESTATE.

In Pittsburgh, the prices of real estate are extremely low; and at the first glance, compare unfavorably with those of other cities. A comparison, however, of the advance of real estate in this community, from 1810 to 1856, presents by no means an unfavorable picture, or a depressing prospect.

In examining the value of real estate in Pittsburgh, it should be borne in mind that from 1818 to 1824, the business portion of the inhabitants, from the depressed state of trade, was in a ruined condition; also, that real estate under the inflation of 1834 and 1836, advanced to high figures; at which rates, the solid capital she possesses, which has so often sustained her in adverse times, has kept it. Unlike many other locations where real estate advanced with the same speculative fever, that of Pittsburgh receded only in particular instances—not generally! Consequently, from 1840 to 1856, the advance in real estate has been mostly in the new wards, where the expansion of 1836 enhanced only by the acre, not by the lot. The effect of the conflagration of 1845, as shown in the second chapter of this volume, should also be considered, in an examination of this subject.

Repeating that, considering Pittsburgh's advantages of site, its business, and its growth in the last 17 years, real estate is surprisingly low, it is proper to assert, in that connection, that this very disparaging point, in a review of the city and its past, is one of the strongest points to build upon for its future.

The depression in prices of houses and of lots in Pittsburgh, for the past few years, presents a singular paradoxical feature in the history of the city. While it has increased in extent, population, and

business—real estate, which is always supposed to grow buoyant under such circumstances, has been languishing. The propriety might be doubted of exhibiting in a volume like this the depression which exists in this city, in that barometer of a city's prosperity, real estate, which in its rise or fall, is presumed to show the increase or falling off of a location in wealth, population and business. Yet as this volume was undertaken for the purpose of presenting this city as it really exists, honesty toward the subject demands that the unfavorable should be presented as well as the favorable; although under the singular aspect existing, of an increase in all things else, the depression in that particular should not be considered as unfavorable. The statement that within the last year houses and lots have been repeatedly offered at as low a price for the fee simple, as the same dwellings would command for rents in Chicago and Cincinnati or St. Louis, in two years time, shows at once the condition of our real estate market.

In those cities mentioned, it would hardly be believed that well built, well finished three story brick houses, with all modern conveniences, erected upon lots 24 by 100 feet, in one of the most popular residential wards of the city were offered at $1500 for house and lot, and hesitatingly taken. Yet this is the case, with so great a demand for houses for rent, that there is at present no comfortable decently situated house, or but few, tenantless in the city. Such a state of affairs, undoubtedly presages a profitable future. Evident as it is that real estate cannot well go further down in the scale of prices, and that the scarcity of houses for renting indicates that the city is largely increasing in population; and plainly, as the bustle of business in our streets shows, that business is increasing, as well as the population; it needs no logical deductions to show that the course of prices of real estate in this city must be upward.

To predict an advance in the real estate of this vicinity, and a substantial one, in the next five years, does not, in view of the foregoing exposition of affairs, need a prophet. Considering that this coming event is casting its shadow before it, in the face of an unfinished railway system, which has heavily burdened the tax-payer, and threatens the placing of heavier burdens upon our real estate holders, how much less does it need a spirit of prophecy to foretell a large advance in real estate, and fortunes made thereby, in the space of the next five years; when it is certain that, in that time, the rail road system of Pittsburgh, which, as will be seen in the chapter treating thereof, is immensely valuable, will be finished, and commence pouring its strength of business and population into this community.

That taxes are in this city apparently heavy, there can be no hesitation in saying, and many predict therefrom, and because there is no perceptible buoyancy in the real estate market, with but one railway line out of nine completed, and the others consuming capital, instead of producing income, that no benefit will accrue to real estate from the completion of the system. Such an idea, to any one who surveys the whole ground of debate in the matter, is amusing, and is similar in its aspect to any which might be advanced in regard to a rolling mill or a glass house in which capital had been expended to carry it on extensively, and while the whole works were completing to running order point, because the turning of one pair of rolls, or the blowing of one pot of glass a year, did not pay, to declare that the glass or iron business would not.

The taxes, and the debt of the city, have a great bearing upon the subject of this chapter, and a brief consideration of these two points, while they will inform the distant reader, will also show to any who have been frightened by this outcry gotten up by our own citizens, what a scarecrow it is.

The debt of the two cities is one million six hundred and eighty-seven thousand two hundred and eighty dollars. Heavy as this sum may appear in a statement of liabilities, yet, reflecting that it is owed by a community, where the partial interruption of business, by low water, during the past fall was computed to have occasioned to the manufacturers alone, a loss of a million and a half of dollars, the debt loses its formidable appearance along side of the immense resources which that fact suggests.

With a debt of $1,687,280, the value of the real estate of the community of Pittsburgh is $28,525,172, upon which is assessed a tax for city purposes of $148,846.12, viz: Pittsburgh, $70,666.12, Allegheny, $78,380.00, being but 8 mills to the dollar upon its real value, although it is 16 mills upon its assessed value; it being the custom in Pittsburgh to assess a house and lot costing $2,000, at about $800, and so on through the whole range of property. In other cities, property is given a true valuation, and taxes levied accordingly, which system, if pursued here, would soon relieve the city of its debt, or, with the valuation of $28,525,172, a direct tax of six per cent. upon it would liquidate the indebtedness.

Although it would seem that such a course would be crushing, yet, the debt thrown off, the result in the upward bound of property relieved of the weight, would, our whole system of rail roads being completed, pay in a short time the whole amount of taxes, while the

thus leaving the city free to devote her whole income to public improvements, would likewise enhance the value of real estate.

That a debt of $1,687,280 should, in view of the wonderful resources, the undoubted amount of wealth possessed by the community of Pittsburgh, lie like a nightmare upon the energies of our business population and our real estate holders, is singular, and is, from the nature of the causes, one which will not long exist.

While dwelling upon the aspect which the real estate interest bears, the view of the subject would not be complete, if among the agents which we consider as tending to produce the advance, we did not consider the demand from so large a portion of the Union, that the government should use some method to improve the Ohio river.

That it will, in a few years, probably cotemporaneously with the finishing of our railway system, be so improved as to be reliably navigable except when obstructed by ice, there can be little or no doubt.

The immense increase and increasing expansion of the West, has rendered it imperative that so important an artery as the Ohio, to the proper circulation of the commerce of the West, should be readily, continuously, and extensively available; and after the triumphs of ocean steam navigation, the victories of the locomotive and the magic of the telegraph, who is prepared to say that the navigation of the Ohio cannot be so improved, as to be largely available at all seasons, except when closed by frosts?

Such being the case, need it be suggested what will be the future of Pittsburgh, or the tendency of its real estate.

It is in view of all these matters bearing upon the prosperity of the city, that there need be no hesitancy in saying, there is no point in the United States where the same opportunities for investment in real estate exist; with the same certainty of a heavy increase in the next five or six years.

Those persons who peruse these pages for the purpose of learning the opportunities for investment, will before this have discovered that it is no fancy picture we are painting, but that we are presenting a fair statement of both sides of the subject; and when we invite capital to invest here, it is not on onesided views, but upon facts and figures.

Having thus briefly presented the aspect of our real estate, a few figures which exhibit the past and present values of it, and its ratio of increase will fitly conclude the chapter.

Table showing the increase in the assessed and actual value of the Real Estate of Pittsburgh, from 1810 *to* 1856:

Year.	Assessed value.	Ratio of Increase per cent.	Real estimated value.	Ratio of Increase per cent.
1810,.....	$ 1,023,885	—	$ 2.047,770	—
1820,.....	2,057,690	101	4,115,380	101
1847,.....	9,729,240	324	19,458,480	370
1856,.....	14,262,586	47	28,528,172	46

The valuation in 1847, by the assessment, enjoys the benefit of the great enhancement in prices caused by the speculations of 1834 and 1836: property in this city as mentioned elsewhere, remaining at inflation prices as a generality, sustained at that point by the solid capital of the city. The assessed valuation of 1856, suffers from the depression mentioned before, as caused by "the great fire," and other public misfortunes, which causes account for the large ratio of increase in value in the former instance, and the small increase in comparison therewith in the latter. The assessed value of the real estate at the various eras given, is taken from the assessment books, and the estimated real value is predicated upon the prevalent mode of assessing as instanced a few paragraphs back, and is set down at least twenty-five per cent. under the sum even that basis would admit of.

CHAPTER XI.

COAL.

Coal was known in England as early as A. D. 853, and was applied to economical purposes about the middle of the twelfth century. In Belgium, according to tradition, a blacksmith discovered the value of coal as a fuel, in 1198; and in 1239, the men of New Castle, England, were granted the privilege of digging coals by King Henry III.

From old writers upon the subject, it appears that the mining of coal was, in the early days of its introduction as a fuel, conducted under special charters. Its extraction in Belgium, was, prior to the fifteenth century, subject to the control and supervision of an especial court; and in Scotland, one of the *privileges* granted to a religious house, in A. D. 1291, was that of mining coals.

The adoption of coal as a substitute for wood was gradual—and many prejudices had to be dissipated before the use of it became general.

In Paris, the medical faculty was employed in the beginning of the fifteenth century, in making a decision of how far this new description of fuel was injurious to health; and in the early part of the sixteenth century, the citizens of London petitioned Parliament against the use of coals. Proclamations were issued in the reigns of the first Edward, of England, and of Queen Elizabeth, forbidding the use of coal during the sitting of Parliament, lest the health of the Knights of the Shire should suffer from its consumption, during their residence in London.

It seems incredible that a human being should be condemned to suffer death for burning coal; yet history records that a citizen of London, for violation of a stringent law prohibiting its use in England, was executed; so great an evil was once deemed that mineral, now considered so great a good, that the value of the yearly extraction from the deposits of that mineral in Great Britain, Belgium, France, Prussia, and Pennsylvania, was, in 1848, estimated at $145,200,000, and every year since has largely increased the demand and supply.

Taylor, in his coal statistics, computes that the above-mentioned sum is "nearly nine times the annual value of the gold and silver exported from Mexico, or six times that of the gross produce of the precious metal in North and South America and Russia." A momentary consideration of the immense excess in value, which is thus shown to be possessed by coal over the gold and silver of the world, fully prepares the mind to admit that Pittsburgh is richer in her coal fields than the balance of the world, in all their deposits of precious metals.

The extent of the bituminous coal field by which Pittsburgh is surrounded in her own State, and from which she derives revenue, is 15,000 square miles—being equal to 8,600,000 acres. The amount of coal contained in that area, it is extremely difficult to estimate, because of the variations of strata, and want of reliable information as to the number of workable coal veins to be found in the same depth from the surface reached by the English and French mines. The upper, or Pittsburgh seam, would, estimating it at an average of eight feet in thickness, contain in that area, 1,498,464,000,000 bushels, or 53,516,430,000 tons of coal—the value of which, at an average rate of five cents per bushel, would be worth $74,923,200,000, or more than the gold production of California, at its present rate of $24,000,000 annually, would amount to in 3,000 years.

The tract of ground containing such a value of mineral, was purchased by the Proprietaries, as the Penn family and their coadjutors were styled, in 1768 and 1784—only seventy-three years ago, *for the sum of* $10,000.

In Pittsburgh, coal appears to have been used as early as 1784, and was then mined from the hill immediately opposite the city, where the Penns granted the privilege at £30 a lot, "to dig coal as far in as the perpendicular line falling from the summit of the hill."*

From that day to the present, Coal Hill, as it is familiarly called, has furnished large quantities of fuel to this locality—and at no point has coal of a better quality, for all purposes for which it is used, been discovered. The importance of this mineral, and its value to Pittsburgh, is so largely dealt upon in the chapters of this work devoted to the mineralogical position of the city, and its manufacturing advantages, that it is unnecessary to remark further here upon the subject. The extent to which it is mined, the cost of its extraction, and the various expenses attendant upon taking it to market, are points which the distant reader will be gratified to find discussed under the title heading this section of the volume.

Until a few years past, all the coal exported from this city, was floated down the river in large flat-bottomed boats, which were usually one hundred and twenty-five feet long, sixteen feet wide, and eight feet deep, with flat perpendicular sides, bow and stern. Each boat of this size holds about 15,000 bushels of coal; and they are floated to their destination lashed in pairs. The usual complement of hands for such boats, is twenty-three or twenty-four. These boats can only be floated down the river, or as it is technically termed, "run," in the high floods that generally, from time to time, in the spring and fall of each year, swell the current of water in the Ohio river. Of late years a system of towing has been introduced, by barges and steamboats constructed expressly for the trade, which is being adopted to a large extent, and will ultimately cause the Pittsburgh "coal boat" to disappear from the waters of the Ohio and Mississippi rivers. The "coal boat" is yet, however, the popular conveyance for coal to the Mississippi markets—the trips of the barges and their tow-boats being confined to the cities above the Falls of the Ohio, with the exception of a few trips made to St. Louis, to supply contracts in that city.

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* Arthur Lee's Journal.

It is from the four Pools of the Monongahela river slackwater, and from the Youghiogheny river, that the large proportion of the coal boats start upon their voyage. The quantity of coal that yearly leaves these rivers, the following table shows; and it is proper, because opportune, to here again call attention to the exhibit which the tables afford of the serious effect that a suspension of the navigation of the Ohio has upon the prosperity of Pittsburgh. By reference to the table it will be noticed that the decrease in 1856 from 1855, in coal shipped out of the slackwater, was nearly sixty-five per cent. or 13,650,914 bushels. Of this, 11,225,674 bushels was a decrease from the amount exported in 1855—worth at market value, in the ports above the Falls, $1,403,209.25—to which extent the suspension of navigation affected the business of Pittsburgh in that one item.

STATEMENT of Coal shipped from the various Pools of the Monongahela Slackwater during 12 years.

Year.	Pool No. 1.	Pool No. 2.	Pool No. 3.	Pool No. 4.	Total.
	BUSHELS.	BUSHELS.	BUSHELS.	BUSHELS.	BUSHELS.
1845,.....	2,527,879	1,328,604	314,342	434,360	4,605,185
1846,.....	.....	.....	.....	.....	7,778,911
1847,.....	3,377,703	4,188,258	1,227,201	851,965	9,645,127
1848,.....	3,536,761	3,986,643	1,436,666	859,291	9,819,361
1849,.....	2,944,044	4,420,347	1,434,723	909,393	9,708,507
1850,.....	3,998,200	5,540,470	1,862,548	906,749	12,297,967
1851,.....	4,105,624	5,846,168	1,769,302	800,134	12,521,228
1852,.....	4,797,704	7,188,539	1,736,622	907,976	14,630,841
1853,.....	.....	.....	.....	.....	15,716,367
1854,.....	4,756,263	9.251,532	2,006,633	1,317,518	17,331,946
1855,.....	6,829,282	11,485,072	2,633,555	1,286,100	22,234,009
1856,*.....	3,910,978	3,213,740	1,031,613	427,764	8,584,095
				Total,....	144,862,689
					Or, 5,173,846 tons.

The above table shows that from the four pools of the Monongahela, and from the Youghiogheny, there were "run" 144,826,689 bushels, or 5,173,846 tons of coal in twelve years.

The subjoined table shows in what manner it was distributed. The figures under the head of "Boats" showing the quantity run to down river ports, and that under the caption of "Flats," indicating the amount delivered for home consumption.

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*Ohio river too low to run coal for 200 days or 6½ months, from May 14th, to December 1st, and closed again December until February.

TABLE showing Coal for home and export trade, shipped from the Monongahela Slackwater for 12 years:

Year.	Boats (exported.)	Flats (home.)
1845,.....	2,660,340	1,944,845
1846,.....	5,236,436	2,542,475
1847,.....	6,513,997	3,131,130
1848,.....	6,496,057	3,223.304
1849,.....	6,329,907	3,378,907
1850,.....	7,825,042	4,472.925
1851,.....	7,645,200	4,876,226
1852,.....	9,903,921	4,726,920
1853,.....	10,800,632	4,915,735
1854,.....	13,666,491	3,665,455
1855,.....	16,300,159	5,933,850
1856,.....	5,174,485	3,409,250
	98,642,667	46,231,022

VALUE OF TWELVE YEARS.

Exported,.....	$9,864,266.70
Home,.....	2,311,251.10
Total,.....	$12,175,517.90

By reference to the tables it will be seen that in 1855, which year it is proper to particularize—from the business of 1856 having been cut off by suspension of navigation—that the quantity of coal exported from the Monongahela slackwater, was 16,300,159 bushels; of this, about 5,500,000 were run to New Orleans. The quantity shown by the same table, taken from the same mines for home consumption, was 5,933,850 bushels. The value of these amounts may be summed up thus:

To New Orleans,.....	5,500,000	bushels,.....	$1,375,000.00
" other down river ports,	10,800,159	"	1,350,019.75
" home trade,.....	5,933,850	"	296,692.50
			$3,021,711.25

The foregoing figures exhibit but one channel of the coal trade. There are from the first dam on the Monongahela river, to the junction of the Chartiers creek with the Ohio, a number of coal rail roads, which furnish coal for home trade and for exportation.

The production of these for the year 1855, was about 3,000,000 bushels.

The value of which may be summed up thus:

For ports below,.....	2,000,000	bushels,.....	$250,000
" home consumption,.....	1,000,000	"	50,000

There are in and around the city limits, about 150 coal works, whose yield is consumed at home, and conveyed to the purchaser by teams. The yield of these pits for 1856, was, as near as we can learn, 9,385,000 bushels—having a value of $556,175.

Another avenue by which the exportation of coals, and home consumption is estimated, is the Pennsylvania Central rail road. On this road was carried

	Tons.*	Bushels.
1853,	65,000	1,425,000
1854,	135,000	3,375,000
1855,	220,000	5,250,000
1856,	245,407	6,132,168

This amount was thus divided:

	Home.		East.	
	Tons.*	Bushels.	Tons.*	Bushels.
1853,	25,000	525,000	40,000	900,000
1854,	70,000	1,750,000	65,000	1,625,000
1855,	100,000	2,500,000	110,000	2,750,000
1856,	110,407	2,760,169	135,000	3,372,000

The Pittsburgh and Connellsville Rail Road is also bringing from the Youghiogheny region, quantities of coal, but its tonnage did not increase the business of the past year, as the road has only begun to carry coal since the commencement of 1857. The future tonnage of the Pittsburgh coal trade on this road will largely increase, not only by shipments from the Youghiogheny river, but by those which will be made from Somerset county, through which the road runs.

The Allegheny Valley Rail Road is likewise swelling the amount of coal delivered in this city; and the coal carried over this road in 1856, amounted to 14,522 tons, or 473,050 bushels—all of which was for home consumption.

The annual value of the coal trade of Pittsburgh, is, from the absence of any source whence can be obtained the yield of the country pits, which supply a large portion of the demand arising from private families, difficult to state correctly. The coal from out the pools of the Monongahela and Youghiogheny, and that carried over the rail roads, can be correctly obtained; but beyond these sources, an underestimate is liable to be made in the coal exported, or delivered in the

* Net ton, twenty-five bushels.

city. The value of the coal trade, however, for the year 1855, in the exportation by the river, and the value of the home consumption, may be quite satisfactorily ascertained. So near as we can discover, the amounts will stand thus:

HOME CONSUMPTION.

Consumed in Dwellings, Stores, and Public Buildings, 1856,	10,855,000
Factories of all descriptions, and Steamboats,	22,000,000
Three Gas Works,	350,000
Two Water Works,	200,000
Total bushels,	33,405,000

EXPORTED.

By Ohio River, 1855,	16,300,159	
" Pennsylvania Rail Road, 1856,	3,372,000	
" Pennsylvania Canal, 1856,	560,000	
" Cleveland and Pittsburgh R. R. 1856,	140,000	
		20,372,159
		53,782,159

Value of Home Trade,	$1,670,250.00
" " Export Trade,	3,000,239.75
Total,	$4,670,489.75

In the *mining* of this there are employed 1,920 men and boys, whose wages amount to $1,075,643.18. Besides the hands employed in mining, there are probably 400 more hands engaged in other labors about the pits. The cost of mining coal is two cents a bushel. The estimated cost of coal in boats ready for running, is four and a half cents per bushel.

To run a pair of boats to New Orleans requires the following outlay and expense:

One pair of boats,	$ 750.00
Two skiffs,	25.00
Provisions for the trip,	200.00
Lines for the trip,	200.00
Canal fees at Louisville,	66.00
Wages of hands,	1,800.00
	$3,041.00

Equal to ten cents a bushel on the 30,000 bushels in a pair. To run to ports above the mouth of the Ohio, the average cost is about one-half of the expense of the New Orleans trip. The average price in New Orleans, of Pittsburgh Coal, is fifty cents a barrel, of two and a half bushels, or twenty cents a bushel; in ports above the mouth of the Ohio, twelve and a half cents; at St. Louis the average price is eighteen cents.

Coal boats are usually sold with one streak of siding on, at $125 apiece. The purchaser desiring to use them for running coal, fits them up at the following cost:

To side and rig a pair of full sized boats, it takes,

Of Lumber, 10,500 feet,	$192.00	
" Oakum, 3 bales,	30.00	
" Spikes, 150 pounds,	9.00	
" Nails, 25 "	1.00	
" Labor,	90.00	
		322.00
Original cost of pair,		250.00
		$572.00

The expense of running coal by the towing system, requires a larger original investment of capital. Tow boats cost about $12,000, and barges $600. Most companies have about twenty-five barges to a tow boat, making the outlay for boats, in the neighborhood of $27,000.

Having given, so far as information could be gathered, the value of the coal trade, at the commencement of 1857—and such of the details as could be reliably obtained, we devote a short space to an exhibit of the growth of the Pittsburgh coal business:

	Bushels.	Exported,	Value.
In 1828, it was estimated at	1,000,000		$ 50,000.00
" 1833, " " returned at*	6,165,480		308,274.00
" 1837, " " estimated at†	11,304,000	2,515,000	753,361.00
" 1842, " " " at‡	12,760,000	3,760,000	900,200.00
" 1846, " " announced at⁂	19,000,000	6,000,000	1,370,000.00
" 1856, it is¶	53,782,159	20,377,159	4,670,489.75
" 1857, it is estimated that it will be, if the Ohio river is navigable, at¶	61,730,358	26,480,350	6,336,720.75

* Journal of the Senate of Pennsylvania, 1833, p 462.

† Harris' Directory, and Lyford's Western Directory.

‡ Geography of Pennsylvania, Trego.

⁂ Governor Shunk's Message, January 7, 1846.

¶ Compiler "Pittsburgh as it is."

From estimates for the year's business, made in the various quarters, and by the various companies, the figures at the close of 1857, if the navigation is good in the Ohio during the spring and in the fall, will stand thus:

Home consumption, 1856,.....	33,405,000
Increased by new manufactories erecting and increased capacity in old ones, &c.....	1,855,000
	35,250,000

EXPORTS.

Ohio River,.....	19,560,190
Cleveland and Pittsburgh Rail Road,.....	2,500,000
Pennsylvania Central Rail Road,*.....	3,860,168
Pennsylvania Canal,.....	560,000
Total bushels,.....	61,730,358
Value of Home Trade,.....$1,566,500.00	
" " Export " 4,774,220.75	
	$6,336,720.75

CHAPTER XII.

BOAT BUILDING IN PITTSBURGH.

The incident of the arrival of a keel boat from the Mississippi, at Fort Du Quesne, mentioned by John M'Kinney in his journal in 1756, and quoted in the first chapter of this volume, is the earliest record of Pittsburgh's connection with the carrying trade of the Ohio.

The contrast between then and now is extreme. To us of the present day, the difference between the keel boat, laboriously urged, from New Orleans to Pittsburgh, in four and five months,

* The increase in the Eastern transportation of coal by this road, is governed by the importation of English coal. This year, (1857,) New York, in consequence of cheap freights over the Atlantic. will be supplied from England with bituminous coal. In 1855, she took 30,000 tons, or 750,000 bushels from Pittsburgh. The English coal costs, on shipboard, in the river Tyne, $1.75 a ton. Pittsburgh coal can be furnished at $1.00 per ton on the siding, at the pit.

and the steamboat compassing the same route in three or four weeks, is not startling; but could the ashes of one of those hardy boatmen which mingle with the dust on the margin of the western rivers, become again a living man, the transition between now and then, would be to him accountable only by magic.

Seventy-three years ago, while the sturdy crew were propelling their boat to its destination, the community they left, and that to which they were proceeding might have been destroyed, and the tenants of the solitary boat, struggling up the currents of the river, remain ignorant of the event until they arrived at the end of their route. Now, the traveler upon the western waters may daily, and frequently more often, while the steamer is tarrying at ways side ports, converse with friends 3000 miles away, and learn the successes or misfortunes of his fellow men; not only in the wide territory through which run the waters over which he is traveling, but in the far off nations of the earth.

The position that Pittsburgh occupies as the point where was constructed, and whence departed the first steam boat that navigated the western waters; gives her an historical prominence, in connection with the invention of steam boats, and has enabled her to attain, and preserve, an equal prominence in the boat building business of the West.

From the date of 1756, up to 1777 there is nothing necessary to record, showing progress in the carrying trade of the western rivers, as connected with Pittsburgh.

In 1777, on the 23d of February, fourteen carpenters and sawyers arrived at Pittsburgh for the purpose of boat building, and immediately set about constructing batteaux, of which they built thirty.

The following account, which it is proper here to quote, of an attempt at intercourse with New Orleans which was at this time made, we find in "Hall's Notes on the Western States," published in 1838.

In 1776, Messrs. Gibson and Linn, the grandfather of Dr. Linn, now a senator in Congress from Missouri, descended by water from Pittsburgh to New Orleans, to procure military stores for the troops stationed at the former place. They completely succeeded in their hazardous enterprise, and brought back a cargo of 136 kegs of gunpowder. On reaching the falls of the Ohio on their return, in the spring of 1777, they were obliged to unload their

boats, and carry the cargo round the rapids, each of their men carrying three kegs at a time on his back. The powder was delivered at Wheeling, and afterwards transported to Fort Pitt.

In July of the year 1794, on the 22d of April of which year Pittsburgh was incorporated as a borough, a line of mail boats was established to run from Wheeling to Limetown, and back, once in every two weeks, the mails being carried from Wheeling to Pittsburgh, and back, on horseback. These boats "were twenty-four feet long, built like a whale boat, and steered with a rudder. They were manned by a steersman and four oarsmen to each boat. The men had each a musket, and a supply of ammunition, all of which were snugly secured from the weather, in boxes alongside their seats." *

The same year there was started a line of boats from Cincinnati and Pittsburgh, in relation to which we quote from an advertisement in "The Centinel of the North-western Territory," published at Cincinnati under date of January 11, 1794. The advertisement states: "Two boats for the present will start from *Cincinnati* for *Pittsburgh*, and return *to Cincinnati* in the following manner, viz: First boat will leave Cincinnati this morning at eight o'clock; and return to Cincinnati, so as to be ready to sail again in four weeks. The second boat will leave Cincinnati on Saturday, the 30th inst.; and return to Cincinnati in four weeks as above. And so regularly each boat performing the voyage to and from Cincinnati, Pittsburgh, *once in every four weeks.*

"Two boats in addition to the above will shortly be completed, and regulated in such a manner that one boat of the four will set out weekly from Cincinnati to Pittsburgh, and return in a like manner.

"The proprietor of these boats, having maturely considered the many inconveniences and dangers incident to the common method hitherto adopted, of navigating the Ohio, and being influenced by a love of philanthropy, and a desire of being serviceable to the public, has taken great pains to render the accommodations on board the boats as agreeable and convenient as they could possibly be made.

"No danger need be apprehended from the enemy, as every person on board will be under cover, made proof against rifle or

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* Craig's History of Pittsburgh.

musket balls, and convenient port holes for firing out of. Each of the boats is armed with six pieces, carrying a pound ball; also a number of good muskets, and amply supplied with plenty of ammunition; strongly manned with choice hands, and the masters of approved knowledge.

"A separate cabin from that designed for the men, is petitioned off in each boat for accommodating ladies on their passage. Conveniences are constructed on board each boat, so as to render landing unnecessary, as it might at times be attended with danger."

The advertisement further states, that "Passengers are supplied with provisions, and liquors of all kinds, of the first quality, at the most reasonable rates possible."

Travelers are referred to cards of rates, to be seen on board the boats, and at the printing office at Cincinnati, for price of passage, &c.

The next event in boat building here, which shows the progress of this point, was the construction of the armed galleys, President Adams and Senator Ross.

In relation to these, we quote from an extract of a letter from Major Craig, dated May, 1798, which is printed in Craig's History of Pittsburgh.

"On the 19th instant the galley *President Adams* was launched and is now at anchor in the Allegheny. She will be completely equipped in a few days, and will, I am confident, be as fine a vessel of her burden and construction, as the United States possesses.

"The keel of the second galley is laid, and other materials prepared."

Of this second galley, a letter quoted in the same work above referred to, remarks: "The galley Senator Ross has been launched, and is now rigged, and will, in a few days, be fully equipped for the Mississippi.

"She is anchored in the Monongahela, abreast of the town. She is certainly a fine piece of naval architecture, and one which will far exceed anything which the Spaniards can show on the Mississippi."

These national vessels were the first sea-going boats which were constructed on the Ohio—although a brig of 120 tons burden, called the St. Clair, was built at Marietta by Commodore Preble, in 1798–99.

From 1802 to 1805 the business of building sea-going vessels seems to have been flourishing here, as, in a short period there were constructed the ships Pittsburgh, Louisiana, General Butler, and Western Trader; the brigs Nanina, Dean, and Black Warrior; schooners Amity, Allegheny, and Conquest. The ship Monongahela Farmer, and brig Ann Jean, were built in the same period at Elizabethtown, on the Monongahela river. The subsequent career of these vessels, and the adventures therein of those who sailed them, would, without doubt, form a pleasant chapter, but there are no records of their voyages; only a semi-tradition that a ship arriving at an East Indian port was, when visited by the Custom House officer, in danger of confiscation because the officer did not know, or would not believe there was such a port of entry as Pittsburgh, from whence, according to her papers, she cleared. He was not convinced of the legality of the papers until the captain had, upon his maps, taken the officer through the Indian Ocean, round the Cape of Good Hope, across the Atlantic, up the Gulf of Mexico to New Orleans, thence a thousand miles up the Mississippi to the Ohio, and thence another thousand miles to Pittsburgh: when, enjoying the great astonishment of the official, he demanded the recognition of the correctness of his papers.

The year 1811 was an important one in the history of Pittsburgh. In that year was built the first steamboat for the navigation of the western waters. The construction of this boat was the first step to the fulfillment of a prediction made by John Fitch of Philadelphia, who was probably the first inventor of steam boats; he having conceived the design in 1785, and carried it into execution in 1788. He died in the West in 1799, and was buried near the Ohio. Previous to leaving the East, he wrote three volumes, which he deposited in manuscript, sealed up, in the Philadelphia Library, to be opened thirty years after his death. These volumes were opened in 1833, and in them he confidently predicts the success of his plan. He prophesies that in less than a century, the western rivers will be swarming with steamboats, and expresses a desire to be buried on the banks of the Ohio, "where the music of the steam engine may soothe his spirit, and the song of the boatmen enliven the stillness of his resting place."

How full of disappointed hope is this sentence from his journal, "The day will come when some more powerful man will get fame

and riches from my invention! but nobody will believe that *poor John Fitch*, can do anything worthy of attention."

The boat whose steam engine was the first to soothe the spirit of "*poor John Fitch*," was the New Orleans. This boat, as before observed, was built at Pittsburgh in 1811. She was 138 feet keel, and between 300 and 400 tons burden; her cabin was in the hold, and she had port holes; also a bowsprit eight feet in length, in ocean steamer style, which was painted sky blue. She was owned by Messrs. Fulton, Livingston and Rosewalt, and her construction was superintended by the latter gentleman. Her cost was $40,000. She was launched in March, and descended the river to Natchez, in December, at which point she took in her first freight and passengers, and from thence proceeded to New Orleans, on the 24th of the same month. She continued to ply between New Orleans and Natchez, until 1814, making the round trip in ten days, conveying passengers at the rate of $25 up and $18 down. On her first year's business she cleared $20,000 *net*. In the winter of 1814 she was snagged and lost near Baton Rouge. While this boat was constructing, Mr. Fulton traveled across the mountains in company with some gentlemen from Kentucky, who were highly amused with the apparent extravagance of his expectations; and although entertaining a high respect for his genius, yet in the course of the journey, which occupied several days, they jested somewhat upon the probable achievements of steam. This freedom gave rise to a prediction by Fulton, which it is apposite to mention here. "In the course of some conversation on the almost impassable nature of the mountains over which they were dragged with great toil, upon roads scarcely practicable for wheels, Mr. Fulton remarked, 'The day will come, gentlemen, I may not live to see it, but some of you who are younger probably will, when carriages will be drawn over these mountains by steam engines, at a rate more rapid than that of a stage coach upon the smoothest turnpike.' "* The then apparent absurdity of this prediction excited great laughter. The predictions of Fitch and of Fulton are fulfilled. As late as 1816, the practicability of the navigation of the Ohio by steam boats was doubted. A writer in the Western Monthly Magazine states that in 1816, he formed one of a company of gentlemen who, watching the long continued efforts of a stern-

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* Hall's Western Notes.

wheel boat to ascend the Horsetail ripple, five miles below Pittsburgh, came to the unanimous conclusion that such "*a contrivance*," might do for the Mississippi as high as Natchez, but that "We of the Ohio must wait for some more happy century of inventions."

Recurring back to 1810, we find in "Cramer's Magazine Almanack" for that year, the following:

"A company has been formed for the purpose of navigating the river Ohio, in large boats, to be propelled by the power of steam engines. The boat now on the stocks, is 138 feet keel, and calculated for a freight as well as a passage boat between Pittsburgh and the Falls of the Ohio."

The boat here alluded to, was the one afterwards known as the "New Orleans." The subsequent career of this boat we have mentioned. The formation of companies for the construction of boats at Pittsburgh, for particular rivers, appears to have been the popular shape which this branch of business took in 1810, 1811, and 1812. In the publications of the day, several such companies are announced. Cramer's Magazine Almanack mentions in 1811, the "Mississippi Steam Boat Co." and that "another company has been formed for the Ohio river." The history of some of those earlier boats we shall briefly record.

The second boat constructed at Pittsburgh appears to have been the *Comet*, of twenty-five tons; built by D. French, for Samuel Smith, in 1812–13. She had a stern wheel, and a vibrating cylinder. She made one trip to Louisville in 1813; descended to New Orleans in 1814, made two trips to Natchez, and was sold, and the engine put up in a cotton gin.

The *Vesuvius* and the *Ætna*, of 340 tons each, were built by the "Mississippi Steam Boat Co." in 1813–14. The Vesuvius, under the command of Captain Ogden, left Pittsburgh in the spring of 1814, for New Orleans; in July, 1816, she was burnt near New Orleans. The Ætna, under command of Captain Gale, started for New Orleans in March, 1815; and after reaching that point, went into the Natchez trade. She was in continual employ until 1822, when she was condemned as worn out.

The *Enterprise*, forty-five tons, was the fourth constructed in this vicinity. She was built at Brownsville, Pa. and made two trips to Louisville in 1814. She departed from Pittsburgh, for New Orleans, on the 1st of December, 1814, under command of

Captain Henry M. Shreve, with a cargo of ordnance. For some time she was actively employed transporting troops. On the 6th of May, 1817, she left New Orleans for Pittsburgh, and arrived at Shippingport (Louisville,) on the 30th, being twenty-five days from port to port; and the first steamer that ever arrived at that port from New Orleans; which event the citizens of Louisville celebrated by a dinner to Captain Shreve. The Enterprise was lost at Rock Harbor, in 1817.

In 1816, the *Franklin*, 125 tons, the *Oliver Evans*, 75 tons, and the *Harriet*, of 40 tons, were built at Pittsburgh. The Franklin was built by Messrs. Shiras and Cromwell, and her engine was built by George Evans. She departed from Pittsburgh, December, 1816, and went into the Louisville and St. Louis trade. She was sunk in 1819, near St. Genevieve. The Oliver Evans was built by George Evans; left Pittsburgh, December, 1816, for New Orleans. She burst one of her boilers in April, 1817, at Point Coupee, killing eleven men. The Harriet was constructed and owned by Mr. Armstrong of Williamsport, Pennsylvania.

The *Washington*, 400 tons, built at Wheeling about this time, had her engines made at Brownsville. She was the first boat with boilers above deck—the boats previous to that having them in the hold. She, also, by making a round trip from Louisville to New Orleans, settled the question, whether steamboats could be rendered useful as a mode of navigation for the ascending trade, and convinced the public, which had continued doubtful, of the practicability and success of steamboat navigation on the western waters. She was in part owned by Captain Henry M. Shreve, and was built under his immediate direction.

A small boat called the *Pike*, was built at Hendersonville, Kentucky, in 1816.

The *General Pike*, constructed at Cincinnati, in 1818, was the first boat built for the exclusive accommodation of passengers. Her cabin was forty feet long and twenty-five feet wide. In addition she had fourteen state-rooms.

The *Expedition*, 120 tons, and the *Independence*, of fifty tons, were constructed at Pittsburgh, in 1818, for the Yellow Stone Expedition for the exploration of the Missouri. The Independence was the first steamboat that ascended the Missouri.

The *Western Engineer*, built in 1819, near Pittsburgh, under the direction of Major S. H. Long, of the United States Topographical

Engineers, for the expedition of discovery to the sources of the Missouri, and Rocky Mountains, was the first boat that ascended to Council Bluffs, 650 miles above St. Louis.

In the first years of boat building, the progress was slow, and many difficulties impeded the rapid advance of steam navigation. We have given some of the particulars connected with the building of the earlier boats, as illustrative of the progress and the spirit of the business.

From 1817, when the success of steamboat navigation on the western rivers was finally conceded by the public—convinced by the trips of the Washington, from Louisville to New Orleans and back in forty-five days, boat building rapidly increased.

In 1818, there were employed on the Ohio and Mississippi rivers, twenty-two steamboats, averaging nearly 230 tons each. In 1818, there were building at different locations on the Ohio, twenty-three boats, of which number,

9	were	constructing at	Pittsburgh,
5	"	"	" Cincinnati,
5	"	"	" Louisville,
2	"	"	" Wheeling,
1	was	"	" Corydon,
1	"	"	" Limestone.

In 1835 there was published an official table, showing the entire number of boats built at all the points on the Ohio river, from 1811 to 1835—giving their names—the year of their construction—the location where built, and their fate; whether sunk, burned, or condemned and broken up. This table, which occupies several pages, we find in Hall's Western Notes, and condense from it the boats built at Pittsburgh and vicinity, omitting the details of their after career, which, however interesting, our space will not admit of.

TABLE

Showing the names of Boats constructed at Pittsburgh, from 1811 to 1835:

Boats and when built.	Boats and when built.	Boats and when built.	Boats and when built.
Ætna,.....1814	Expedition,.....1818	Kentuckian,....1829	Packet,.....1829
Allegheny,.....1818	Eclipse,.....1823	La Fayette,.....1825	Peruvian,.....1830
America,.....1826	Echo,.....1826	Liberator,.....1826	Pittsburgh, ...1831
American,.....1824	Erie,.....1826	L'y Washing'n,1826	Planter,.....1831
Allegheny,.....1830	Essex, ...1827	Lark,.....1829	Privateer,.....1833
Abeona,.....1830	Enterprise.....1830	Louisville,.....1831	Protector,.....1834
Argus,.....1831	Eagle,.....1830	Lancaster,.....1832	Potosi,.....1834
Antelope,.....1831	Franklin,.....1817	Messenger,.....1826	Plough Boy,.....1834
Aid,.....1834	Florida,..... ..1826	Maryland,.....1827	Pawnee,.....1835
Alert,.....1835	Favorite,.....1822	Missouri, ...1828	Pioneer,.....1835
Algonquin,... ...1835	Friendship,.....1825	Monhican,.....1829	Rapide,.....1819
Arabian,.....1835	Fame, ...1826	Monticello,.....1829	Rambler,.....1823
Adventure,.....1835	Free Trader,.....1832	Mobile,..... ..1830	Red Rover,.....1828
Buffalo,..... ...1814	Fame,.....1832	Mohawk,.....1831	Red Rover,.....1829
Balise Packet, .1819	Farmer,.....1833	Mediterranean, 1832	Ruhama,.....1829
Bolivar,.....1825	Flora,.....1835	Missourian,.....1832	Return,.....1832
Baltimore,.....1828	Geo Madison,...1817	Mobile Farmer,1832	Robt. Morris,...1835
Boston,.....1831	Gen. Jackson,...1817	Miner, ...1833	Rover,.....1835
Baltic,.....1831	Gen. Jackson,..1817	Majestic,.....1833	St. Louis,.....1818
Boon's Lick,.....1833	Gen. Neville,...1822	Moque,.....1833	Shamrock,.....1827
Big Black,.....1835	Gen. Brown,....1825	Minerva,.....1833	Shepherdess,...1827
Comet,.....1812	Gen. Wayne,....1825	Marion,.....1835	Star,.....1828
Car of Com'rce,.1819	Gen. Scott,.....1825	Madison,.....1835	Stranger,.....1828
Cumberland,....1819	Gen. Coffee,.....1826	New Orleans,...1811	Sam Patch,.....1830
Columbus,.....1826	Gondola,.....1830	New York,.....1826	Scout,.....1831
Commerce, ...1826	Gleaner,.....1830	New Penn'a.....1827	Sangamon, ...1832
Cumberland,....1828	Gazelle,.....1832	Neptune,.....1828	Siam,.....1835
Caroline,.....1828	Galiman,.....1834	N. American,...1828	Selina,.....1835
Citizen,.....1829	Herald,.....1824	Nile,.....1829	Tamerlane,.....1818
Cora,.....1829	Hercules,.....1826	New Jersey,.....1830	Thos. Jefferson,1818
Corsair,.. 1829	Huntsville,.....1829	Napoleon,.....1831	Telegraph,.....1819
Carrolton,.....1831	Huron,.....1289	N. Brunswick,..1832	Talisman, ...1828
Columbus,.....1831	Home,.....1829	Nimrod, ...1832	Talma,.....1829
Courier,.....1831	Huntsman,.....1829	Olive Branch,...1819	Trenton, ...1829
Choctaw,.....1831	Hudson,.....1829	Ohio,.....1830	Tallyho,.....1829
Chief Justice Marshall,... 1832	Hatchee,.....1829	Olive,.....1830	Tariff, ...1829
	Herald,.....1829	O'Connell,. 1833	Transport,.....1832
Chester, ...1832	Henry Clay,.....1831	Ohioan, ...1833	Tempest,.....1835
Chicasaw,.....1832	Huntress,.....1834	President,.....1824	Tuskina,.....1835
Cayuga,.....1833	Hunter,.....1834	Phœnix,.....1823	Uncle Sam,.....1829
Commerce,.....1834	Independence,..1818	Pittsb'g & St. Louis Pack't. 1823	Uncas, ...1829
Clairborne,.....1834	Illinois,.....1826		Vesuvius,.....1814
Dolphin, ...1819	Industry,.....1829	Pittsburgh,.....1823	Victory, ...1829
DeWitt Clinton,1826	Ivanhoe,.....1834	Pennsylvania,..1823	Van Buren,...,..1833
Delaware,.....1828	James Monroe..1816	Paul Jones,.....1825	West. Engineer,1819
Dove,.....1831	James Ross, ...1818	Pocahontas,.....1825	William Penn,..1825
Despatch,.....1832	Jubilee,.....1826	Powhatan,.....1828	Wm. D. Duncan,1827
Detroit,.....1835	Jas. O'Hara,.....1828	Phœnix,.....1828	Woodsman,.....1831
Dover,.... 1835	Juniata,.....1832	Plaquemine,.....1828	Warrior, ...1832
Dayton,.....1835	John Nelson,...1833	Pennsylvania,..1827	

Making 197 boats built in the period embraced in the table. There were built at Brownsville in the same period, twenty-two, and at Beaver, seven.

In 1836 the construction of boats was greatly increased. In that year, the Alton, Asia, Amite, Boonsville, Bee, Brighton, Bogue-homa, Baltimore, Columbiana, Chamois, C. L. Bass, Camden, Corinthian, Emerald, Eutaw, Florida, General Wayne, Gipsey, Grand Gulph, George A. Bayard, Georgia, Huntsville, Havana, Howard, Harkaway, Kentucky, Kansas, Lilly, Loyal Hannah, London, Louisville, Mobile, Massillon, Nick Biddle, Newark, New Beaver, New Lisbon, Ontario, Oceola, Palmyra, Pavillion, Prairie, Paris, Quincy, Robt. Morris, Rienzi, Salem, Saudusky, Savannah, St. Peters, Steubenville Packet, St. Louis, Troy, Tremont, United States, Vandalia, Vermont, Wabash, Warren, Wm. Wirt, Wm. Hurlburt—in all 61, were built, being 252 steamboats constructed at Pittsburgh, from 1811 to 1836. Of these there were finished in

1811,	1	1826,	16
1812,	1	1827,	7
1814,	3	1828,	16
1816,	1	1829,	25
1817,	5	1830,	12
1818,	7	1831,	17
1819,	8	1832,	18
1822,	2	1833,	12
1823,	5	1834,	10
1824,	3	1835,	19
1825,	9	1836,	61

One circumstance among these records of boat building is noticeable, and that is the pioneer character of many of the boats constructed at Pittsburgh.

For instance, the New Orleans was the first steamboat to navigate the Ohio and Mississippi. The Independence was the first to ascend the Missouri. The Western Engineer, the first to reach Council Bluffs; and the American is mentioned in Niles' Register, in April, 1825, as the first to ascend the Monongahela. The Enterprise the first to ascend Red river, and to make the return voyage from New Orleans up the Ohio.

In 1837, there were owned here, and running in regular lines to this city, sixty-three boats of an average value of $15,000 each, being a total of $945,000.

In 1846 there were built here, sixty-three steamboats, besides keels, barges, &c. The tonnage of the steamboats was 11,084 tons.

From 1852 to 1856, there were constructed at this point, steamboats as specified below:

	Steamboats.	Tonnage.	Value.
1852,	70	.....	$1,050,700
1853,	78	21,007	1,560,000
1854,	83	14,692	1,660,000
1855,	72	15,360	1,440,000
1856,	59	11,424	1,180,000

The business of 1856, from low water, was less, by probably one third, than it would otherwise have been. The number of boats constructed in that year, and the tonnage thereof, shows a falling off from previous years; notwithstanding which it contrasts brightly with the six boat-building points on the Ohio, as given below:

Of 177 steamboats, barges, keel-boats, &c. constructed on the Ohio river, in 1856, there were built at Pittsburgh,

		Tonnage.
Steamers,	59	11,424 60-95ths.
Keels,	15	664 54 "
Barges,	14	1,417 23 "
Flatboats,	20	553 8 "
Total,	108	14,059 45-95ths.

		Tonnage.
At Cincinnati, Steamers,	30	8,281 53-95ths.
" " Barges,	2	259 73 "
Total,	32	8,541 26-95ths.

At New Albany, Steamers,	18
" Louisville, "	11
" Jeffersonville, "	5
" Madison, "	2
" Paducah, "	1
Total,	37

On account of the great abundance of the different kinds of timber, the cheapness of iron, of labor, of paint, and of all other materials used in the construction of steamboats, they can be built at a less cost at Pittsburgh than in any western port, and consequently

there are built and fitted out here, more steamers than at any three or four other cities of the West. That they are built equally as well as elsewhere, there is no denial; and were there, the superb, powerful boats which have in the last seven years been sent out from this port, would at once assert and maintain the superior ability of our shipwrights. The leading city, for nearly fifty years, engaged in the construction of boats for the western waters, there is a vast fund of practical knowledge, accumulated by those many years experience, existing in the minds of the contractors and mechanics employed in that branch of trade in Pittsburgh; and such boats as the Buckeye State, the Pennsylvania, the City of Memphis, and a score of others similar, attest the skill with which that knowledge is brought to bear in the production of boats unequaled on the western waters for speed, beauty, comfort, convenience and cheapness.

It is estimated, taking the close of the first quarter as data, that, if the water is favorable in the Ohio this year, by the close of 1857, there will have been completed at this port, eighty-four steamboats of a value of $1,680,000. There were enrolled, up to the 1st of April of this year, thirteen steamers, of a tonnage of 2,814 tons, and there were then partially finished and not yet enrolled, eight more. For the same quarter there were enrolled eighteen keel-boats and barges, having a tonnage of 1,092 tons; also two schooners of eighty-eight tons each, making the entire enrollment of the quarter thirty-three boats, having a tonnage of 4,082 tons, which is in reality much greater—in fact double the amount of the Custom House admeasurement; or, 8,164 tons. The law under which boats are measured having been enacted in 1793, before a western steamboat had been constructed, it did not contemplate their peculiar build in the measurement therein prescribed.

Beside the building of steamboats there is a heavy business carried on in the construction of barges, keel-boats and coal flats. There is no reliable source from which the number of these can be estimated. An examination of the yearly reports of the Monongahela Navigation Company, shows that the requirements of that trade alone, have consumed in twelve years, over $2,753,608 of flat-boats, or $221,134 a year; the average for the last three years is $223,080. In 1855, the consumption was $311,088, and would have been equally as large in 1856, if the continued low water had not prevented the running of coal. In 1857, it is estimated

the consumption of flat or coal boats in the pools of the slack-water, will be about $388,388 worth for the running of coal. The amount of keels built yearly or in an average of years, there is no data to estimate from, beyond the requirements of the coal-towing trade—that requires about $30,000 worth of barges yearly, as the books of the Custom-house exhibit.

The following table shows the comparative state of the boat building trade for the years specified:

Years.	Steam-boats.	Barges, Keels, &c.	Total.	Tonnage Keels.	Tonnage Boats.	Total Value.
1837.....	63	...	.....	.....	.....	$ 985,000
1846,.....	63	...	.....	.....	11,084	1,260,000
1852,.....	70	32	102	.....	.....	1,419,000
1853,.....	78	35	113	.....	21,007	1,581,000
1854,.....	83	23	106	.....	14,692	1,673,800
1855,.....	72	50	122	4,741	15,360	1,470,000
1856,.....	59	49	108	2,230	11,424	1,207,400

The tonnage in the above table should, for the reason given before, be double that registered at Custom-house.

On the first of January, 1855, it appeared from a careful revision of the enrollment books at the Custom-house of Pittsburgh, by order of the Secretary of the Treasury, that there were owned at Pittsburgh at that date, 153 steamboats and 54 barges, all of which were in good running condition; and that the entire live tonnage was, Custom-house admeasurement, 43,772 tons; or, in reality about 86,000 tons.

Taking the construction of 1853, 1854, 1855, 1856, and 1857 as estimated, the average yearly number of steamboats constructed would be seventy-six. The average of keels, barges, &c. would be forty-eight. The consumption of coal boats is about $388,000. This average would give the business of boat building in Pittsburgh, at the following figures:

Average yearly construction of	Steamboats,.....		$1,520,000
" " "	" Keels, Barges, &c....		26,800
" " consumption	" Coal Boats,.....		388,000
			$1,934,800

This aggregate amount could be swelled very justly to considerable over $2,000,000 from the occasional construction of descriptions of boats outside of those specified, as for instance the two schooners enrolled in the first quarter of 1857, enumerated before.

CHAPTER XIII.

PR OGRESS OF MANUFACTURES FROM 1804 TO 1840.

The expression, "Pittsburgh Manufactures," is one of the utmost familiarity, all over the West and South-west, and is rapidly becoming so in the East. In the large cities and in the growing towns, the announcement of "Pittsburgh Manufactures" appears in the daily advertisements of the merchants; and at the store of the cross roads and of the fresh grown village, it is a conspicuous item upon the signs of their proprietors. Before entering into an exposition of their value, it will be interesting to trace their early growth.

In 1804, Cramer's Almanack says, "Do not be surprised when you are informed that the averaged value of the articles manufactured in Pittsburgh for 1803, amounts to upwards of $350,000." From the same book the following table is extracted verbatim:

A view of the Manufacturing trade of Pittsburgh with the average amount of each article as made from raw material and fit for the market, for the year 1803.

Glass, window bottles, Jars, decanters, tumblers, blue glass,.....	$12,500 00
Glass-cutting—N. B. equal to any cut in the states of Europe,.....	500 00
Tin ware—320 boxes, 40 dollars each,.....	12,800 00
Barr iron, mill, ship-work, axes, hoes, plough irons, &c.—50 Tons at 17 cts per lb.....	19,800 00
Brass hand irons, still cocks, &c.,.....	2,800 00
Cutlery, augers, chisels, hackles, planing bits, drawer knives, &c.....	1,000 00
Cut and hammered, nails, 40 tons, 18 cts. per lb.....	16,128 00
Bells, cow,.....	200 00
Guns, Rifles, &c.,.....	1,800 00
Clocks, silver smith work,.....	3,000 00
Screens for small grain—3, 40 dollars each, ...	120 00
Scythes and sickles,.....	1,500 00
Cut stones, grind, tomb stones, &c.,.....	2,000 00
Cabinet work, much exported,.....	14,000 00
Carpenters Planes,.....	850 00
Waggons, carts, &c.,.....	1,500 00
Barrels, tubs, and buckets,.....	1,150 00
Kentucky and keel bottom boats, ships of burden, and barges,.....	40,000 00
Windsor chains—180 doz., 15 dollars per doz.,.....	2,700 00
Spinning wheels—400, 3 dollars each,.....	1,200 00
Pumps,.....	500 00
Carpenter work,.....	13,500 00

Candles—12,000 lbs., 20 cts. per lb.,	$2,400 00
Soft soap—800 bbls., 4 dollars per bbl.,	3,200 00
Beer and porter—900 bbls., 5 dollars per bbl.,	4,500 00
Bread and biscuit flour—1400 bbls., 6 dollars per bbl.,	8,400 00
Shoes—5180 pairs, 75 cts. per pair,	9,065 00
Boots—550 pairs, 6 dollars per pair,	3,300 00
Saddles—450, 15 dollars each,	6,750 00
Bridles—1,500, 50 cts. each,	2,250 00
Harness work,	500 00
Buck-skin breeches, and dressed skins,	2,300 00
Cloaths, price of labor only,	5,950 00
Segars, snuff, and pigtail tobacco	3,000 00
Ropes, cables, beds cords, &c.,	2,200 00
Matrasses—19, 20 dollars each,	380 00
Dyed cotton, and flaxen yarn (labor,)	450 00
Carded and spun cotton by the carding engine and spinning jenny,	1,000 00
Woved striped cotton—5,500 yards, 1 dollar per yard,	5,500 00
Linen, 700,—3000 yards, 40 cts. per yard,	1,200 00
Tow linen—1500 yards, 25 cts. per yard,	375 00
Lindsey woolsey—3,500 yards, 60 cts per yard,	2,100 00
Carpeting, rag—1,200 yards, 75 cts yer yard,	900 00
Stockings, wove,	500 00
Coverlid and diaper weaving,	500 00
Weavers' reeds,	200 00
Hats, wool and fur—2,800, 5 dollars each,	14,000 00
Chip hats—90 doz., $7,50 per doz.,	675 00
Leather, tanned,	10,000 00
Brushes all kinds, Russia bristles,	2,500 00
Bricks—1,250,000, 4 dollars per thousand,	5,000 00
Crockery ware,	3,500 00
Mason work,	10,500 00
Plastering and painting,	3,500 00
Paper made up into books,	1,000 00
Total,	$266,403 00

The following articles of Country Manufactures may be considered the principal in which the bartering trade is carried on in this place.

Whiskey—2,300 bbls., 12 dollars per bbl.,	$27,600
Linen, 700—23,000 yards, 40 cts per yard,	11,200
Lindsey woolsey—4,000 yards, 50 cts per yard,	2,000
Tow linen—9,000 yards, 25 cts per yard,	2,250
Twilled bags—3,000, at $1 each,	3,000
Striped cotton,—3000 yards, 80 cts., per yard.,	2,400
Raw cotton from Tenn.—30,000 pounds, 25 cts per pound,	7,500
Maple sugar—15,000 pounds, 12 cts. per pound,	1,800
Lake salt, Onidago—1,000 bbls., 12 dollars per bbl.,	12,000
Castings—50 tons, 100 dollars per ton,	5,000
Barr iron—80 tons, 160 dollars per ton,	12,800
Flax, hemp, oats, cheese, &c.—say,	5,000
Total,	$92,505

The following is from Cramer's Almanack, of 1806: "We feel peculiar pleasure in noticing the improvements of our town, two very important manufactories have been lately erected and are now in operation. The one a cotton manufactory, which can spin 120 threads at a time, with the assistance of a man and boy. The big cylinder of the carding machine has on it 92 pair of cards attended by a boy; the reeling is done by a girl. The other is an air foundry, for the purpose of casting iron pots, kettles, mill irons, &c. * * * * * * * We also learn that a machine for carding wool is about to be erected." The same page contains the following: "Mr. Lintot has been engaged some time in building a boat to go up stream with the assistance of horses. If the plan succeeds it will be attended with many important advantages to those concerned in the trade of the rivers."

1807. It is mentioned that "this town is growing rapidly into importance." The following manufactories are recorded: "O'Hara's glass factory, producing yearly $18,000; Kirwin & Scott's cotton factory; M'Clurg's air furnace; Poter's, Stringer's & Stewart's nail factories, producing about 40 tons annually. Two extensive breweries (O'Hara's & Lewis',) whose beer and porter is equal to that so much celebrated in London; two rope walks (Irwin's & Davis'); three copper and tin factories, (Gazzam's, Harbeson's, and Bantin's & Miltenberger's.)"

1808. There were in the town the following "master workmen in each particular branch of business carried on in Pittsburgh:"

1 Cotton Factory,
1 Green Glass works,
2 Breweries,
1 Air Furnace,
4 Nail Factories,
7 Coppersmiths,
1 Wire Manufactory,
1 Brass Foundry,
6 Saddlers,
2 Gunsmiths,
2 Tobacconists,
1 Bell maker,
1 Scythe and sickle maker 5 miles up the Allegh'y,
2 Soap boilers and tallow chandlers,
1 Brush maker,
1 Wool and Cotton Cord manufacturer,
4 Plane makers,
6 Milliners,
12 Mantua makers,
1 Stocking weaver,
1 Glass cutter,
2 Book Binderies,
4 House and sign painters
2 Tinners,
1 Sail maker,
2 Mattress makers,
1 Upholster,
3 Wagon makers,
5 Watch and Clock makers and Silversmiths,
5 Brick Layers,
17 Blacksmiths,
1 Machinist and Whitesmith,
1 Cutler and tool maker,
32 House Carpenters and Joiners,
21 Boot and Shoe makers,
1 Ladies' shoe maker,
5 Windsor chair makers,
1 Split-bottom chair maker,
13 Tailors,
3 Spinning-wheel spindle and crank makers,
1 Breeches maker,
1 Glove maker,
12 School Mistresses,

1 Trunk maker,
5 Coopers,
10 Blue dyers,
13 Weavers,
1 Comb maker,
7 Cabinet makers,
1 Turner,
6 Bakers,
8 Butchers,
2 Barbers,
6 Hatters,
4 Physicians,
2 Potteries,
2 Straw Bonnet makers,
1 Reed maker,
4 Plasterers,
3 Stone Cutters,
5 Boat Builders,
2 Ship Builders,
1 Saddletree maker,
1 Flute and Jewsharp maker,
1 Pump maker,
1 Bell hanger,
2 Looking-glass makers.
1 Ladies' lace "
1 Lock maker,
7 Tanners,
2 Rope Walks,
2 Spinning Wheels,
33 Tavern keepers,
50 Store keepers or merchants,
4 Printing offices,
1 Copper plate printer,
5 Brick yards,
3 Stone masons,
2 Booksellers,
1 Harness maker,
1 Horse farrier,
1 Starch maker,
1 Gardner and seedman,
3 Board & lumber yards.

Some of the comments upon the various occupations, as given in the account from which we copy, are illustrative of the times, viz: The cotton factory is mentioned as producing cotton yarns, &c. "to the great credit and profit of its industrious proprietor." The comb maker "wants horns, and gives for good ones $3 per 100." "Two rope walks (at which hemp is much wanted)." The machinist is announced as "equal if not superior to any workman in the United States."

In addition to the manufactories enumerated in 1808, there were in 1809,

1 "White Glass Works, Messrs. Robinson & Ensell, in which is manufactured all kinds of Glass-ware of a good quality."

1 "Bell-metal Button manufactory, by Thomas Neal—the buttons well made and sell as manufactured—60 cents per gross. He gives the highest price for old pewter, brass and copper."

1 Pipe manufactory by Mr. Price.

1 Cotton " by Mr. Scott.

1 Patent boot and shoe maker. "The heel and soal is tacked—without a stitch—and are strong. Abel Smith is the patentee."

1810. According to "A cursory view of the principal manufactures in and adjacent to Pittsburgh" there were in the town—

Three Glass Works "in handsome operation," producing flint glass to value of	$30,000
Producing Bottles and window glass, to value of	40,000
Two Cotton Mills "are working 60 spindles, the other contemplates working shortly 234 spindles." Their manufactures are set down at a value of	20,000

"Their machines are set in motion by the power of horses."

One Air Furnace, which "lately cast 70 tons of cannon balls for the United States."

One Iron grinding mill, "recently got into operation."

"A manufactory of white metal buttons to the extent of 40 or 60 gross a week."

Of Ironmongery, there were made "of chisels, claw hammers, steelyards, shingling hatchets, drawing knives, cutting knives, shovels, tongs, hackles, gimlets, augers, squares, door handles, Jack screws, files, stock locks, spinning-wheel irons, axes, hoes, chains, kitchenware, &c." to amount of..... $15,000

Of Nails, there were "manufactories of these in town which make about 200 tons cut and wrought nails of all sizes annually."

It is mentioned of bridle bits and stirrups, that "a manufactory of these has been recently established."

Of tin, copper and Japan wares there were "six manufactories briskly carried on," manufacturing to amount of..... 30,000

Wire weaving was carried on to a considerable extent.

Of Glass cutting it is recorded, "This business has been recently established by an ingenious German, (Eichbaum,) formerly glass cutter to Louis XVI. late King of France. We have seen a *six light chandelier* with prisms of his cutting which does credit to the workman and reflects honor on our country, for we have reason to believe it is the first ever cut in the United States. It is suspended in the *Ohio Lodge*, *No.* 113, in the house of Mr. Kerr, innkeeper."

About 52,800 yards were annually woven of linsey-woolsey, cotton, and linen mixed, averaging 66 cents per yard, worth..... $38,848

Of Linen, Cramer's Almanack says, "About 80,000 yards of flaxen linen, coarse and fine, are brought to the Pittsburgh market yearly." The average price appears to have been about 60 cents.

Of this article the same publication says: "We feel a pleasure in having seen a fine piece of linen made by Mrs. James Gormly of this place; it is spun six dozen cuts to the pound, and is 1600 in quality, it sold for $1.50 per yard." * * * * * * * * * "Let it no longer be foolishly and roundly asserted that American flax will not make, nor the American women cannot spin fine linen."

In connection with this it will not be out of place to say, that all the publications of about this date, contain articles, and many from distinguished citizens, urging the manufacture of linen, and attention to the culture of flax. Pittsburgh appears to have been then looked to as the most important point for the establishment of such factories.

Says one publication of the manufacture of fine thread: "We are happy to find that fine and beautiful thread is now spun and brought

to our market. We have seen some of twelve dozen cuts to the pound, about the quality of No. 28 imported."

Of Rope Walks there was but one, and that on a small scale.

3,000 pounds of rappee snuff and 800,000 segars were manufactured principally from Kentucky tobacco, at that date.

We quote the writer in full upon the two articles, flour and whisky: "Of these articles a vast and unknown amount is made throughout this country. There is too little foreign demand for the former and too great a home consumption of the latter."

Of boat and ship building, the publication from which we extract, says: "Kentucky and New Orleans boats, keels, barges, skiffs, &c. are made in great numbers on all our rivers. And there is a vessel of 150 tons now building on the Allegheny, by Mr. Robbins."

At that date one steam mill had been erected by Owen and Oliver Evans, of Philadelphia, at a cost of $14,000. "She is calculated for three pairs of stones, which it is expected will make 100 barrels of flour in the 24 hours."

In that year it was estimated that within sixty miles of Pittsburgh, "about 4,000 tons of bar iron, 18,000 tons of pigs and castings, and 400 tons of slat iron were made annually. Exclusive of what is made at these forges, there are about 500 tons of rolled and bar iron come to our market annually from forges in the mountains."

The business of saddlery is "carried on briskly to the value of about $40,000."

The account of boots and shoes says "there are made in this place to the amount of 45,000 pairs of shoes and 15,000 pairs of boots, annually."

In 1812, an article for Cramer's Pittsburgh Magazine Almanack of that year, set down the manufactures of Pittsburgh as follows, from the enumeration by the marshal, in 1810:

One steam grist mill, manufactures 60,000 bushels of grain.	
Three carding and spinning mills, manufacture to value of	$14,248
One flat iron mill, manufacture to value of	2,000
Two distilleries, make 600 barrels of whisky.	
Four brick yards, make to amount of	13,600
One rope walk, make to amount of	2,500
Two air furnaces, make 400 tons, to amount of	40,000
Three red lead factories,	13,100
Six nailcries, make to amount of	49,890
Three glass works,	62,000
Two potteries,	3,400
Two gunsmitheries	2,400
Three tobacconists,	11,500
Sixteen looms, manufacture 19,443 yards of cloth.	

Six tanneries,	15,500
Seventeen smitheries,	34,400
Four cooperies,	2,250
Saddles, boots and shoes,	65,878
Ten hatteries,	24,507
Four silversmiths and watchmakers,	9,500
Six copper, brass and tin factories,	25,500
Three stone cutters,	8,800
Three boat and ship builders,	43,000
Two wagon makers,	2,872
Three chandlers,	14,500
One button manufactory,	3,000
One stocking weaver.	
One cutlery,	3,000
One glass cutting,	1,000
One wire weaving establishment.	
Three printing establishments.	
One book bindery.	

Upon this statement the writer of the article remarks that some of the estimates are too low for the time, especially in the saddlery line, which was ascertained in 1807, with some degree of accuracy, to amount to $40,000. In the same year, boots and shoes were made to amount to $70,000. The value of the above manufactures is given at $2,000,000. The same article also mentions that the manufacture of coffee mills and locks by James Patterson, an English artist, has lately commenced.

In 1813, there were five glass factories in the town, producing flint and green glass to amount of $160,000; two large air foundries, M'Clurg's & Beelen's, casting about 600 tons a year, worth $54,000; also, one small one, carried on by Mr. Price, for casting butt hinges, &c.; one extensive edge tool and cutlery manufactory, Messrs. Brown, Barker & Butler; one steam works, carried on by Messrs. Foster & Murray, for making shovels, spades, scythes, &c.; one rolling mill (erecting) by C. Cowan, with a capital of $100,000; one lock factory (Patterson's); one factory (Updegraff) for files, door handles, &c.; two steam engine works (Stackhouse & Rodger's and Tustin's); one steel furnace (Tuper & M'Kowan); one wool carding machine factory (James Cummins); one woolen factory (James Arthurs); one flannel and blanket factory (Geo. Cochrane); one cloth steam machine factory (Isaac Wickersham); two manufacturers of stirrup irons and bridle bits; one wheel iron factory (Stevenson & Youard); one wire mill (Eichbaum & Sons); one button factory (Reuben Neal); one knitting needle factory (Frithy & Pratt); two silver platers (Benj. Kindricks and Mr. Ayers); one

morocco factory (Scully & Graham); one white lead factory (Beelen); one suspender factory (William Gore); one brass foundry (Thomas Cooper); one trunk factory (J. M. Sloan); one brush factory (Mr. Blair); six saddle factories; two breweries; one steam flour mill; one rope walk (Jno. Irwin & Co.); eleven copper factories, and three plane factories (Wm. Scott and Lithgrow).

The following account of manufactures carried on in the city and vicinity was collected under the direction of Councils, and reported to them in January, 1817, by their Committee:

Business.	No.	Hands.	Amount.
Auger maker,	1	6	$ 3,500
Bellows maker,	1	3	10,000
Blacksmiths,	18	74	75,100
Brewers,	3	17	72,000
Brush makers,	3	7	8,600
Button maker,	1	6	6,250
Cotton spinners,	2	36	25,518
Copper and tin smiths,	11	100	200,000
Cabinet makers,	7	43	40,000
Currier,	1	4	12,000
Cutlers,	2	6	2,000
Iron foundries,	4	87	180,000
Gunsmiths and bit makers,	3	14	13,800
Flint glass factories,	2	82	110,000
Green glass factories,	3	92	130,000
Hardware merchants,	2	17	18,000
Hatters,	7	49	44,640
Locksmith,	1	7	12,000
Linen manufactory,	1	20	25,000
Nail manufactory,	7	47	174,716
Paper maker,	1	40	23,000
Pattern maker,	1	2	1,500
Plane maker,	3	6	57,600
Potter fine ware,	1	5	8,000
Rope maker,	1	8	15,000
Spinning machine maker,	1	6	6,000
Spanish brown manufactory,	1	2	6,720
Silver plater,	1	40	20,000
Steam engine makers,	2	70	125,000
Steam grist mills,	2	10	50,000
Saddlers,	6	60	86,000
Silversmiths, &c.	5	17	12,000
Shoe and boot makers,	14	109	120,000
Tanners,	7	47	58,860
Tallow chandlers,	4	7	32,600
Tobacconists,	4	23	21,000
Wagon makers,	5	21	28,500

Weavers,	2	9	14,562
Windsor chair makers,	3	23	42,600
Woolen manufacturers,	2	30	17,000
Wire drawer,	1	12	6,000
White lead factory,	1	6	40,000
	148	1,280	$1,896,366

In addition there were the following trades returned by committee, of which no estimates were furnished by "conductors:"

Chair makers,	3	...	.....
Currier,	1	...	.....
Cabinet makers,	2	...	.....
Cotton carder,	1	...	.....
Comb maker,	1	...	.....
Coach maker,	1	...	.....
Copper plate printer,	2	...	.....
Book binders,	3	...	.....
Hatters,	4	...	.....
Gilder,	1	...	.....
Machine makers,	2	...	.....
Nailers,	5	...	.....
Printers,	6	...	.....
Plane makers,	1	...	.....
Blacksmiths,	21	...	.....
Shoemakers,	23	...	.....
Saddlers,	2	...	.....
Silk dyer,	1	...	.....
Stone cutters,	6	...	.....
Tallow chandlers,	3	...	.....
Tanners,	5	...	.....
Weavers,	15	...	.....
Wire worker,	1	...	.....
Coffee mill maker,	1	...	.....
		357	70,0003
	259	1,637	$2,266,366

In 1825, the Gazette of November 19th says, there are seven rolling mills, eight air foundries, six steam engine manufactories, and one extensive wire manufactory.

In the same year, and at the same date, Niles' Register states that window glass is made to the amount of 27,000 boxes, having a value of $135,000, and flint glass to the value of $30,000—about $100,000 of which is exported.

In 1829, the Pittsburgh Gazette says, "There are in Pittsburgh nine foundries that consume 3,500 tons of metal, and employ 225 hands; eight rolling mills, using 6,000 tons of blooms, 1,500 tons pig

iron, and employing 300 hands; nine nail factories, employing 150 hands and producing eighteen tons of nails; seven steam engine factories, employing 210 hands, and that the total consumption of iron was 6,000 tons pig and an equal quantity of blooms."

In 1830, there were 9,282 tons of iron rolled and 100 steam engines built.

In 1831 there were eight glass houses, four flint glass, 32 pots, four window glass, employing 102 hands, using 7,000 cords of wood, 700 tons of sand, 1,000 barrels of salt, 40,000 pounds of potash, 150,000 bushels of coal, producing about $500,000.

Twelve foundries in and near Pittsburgh which consumed 87,000 bushels of coal; cast 2,963 tons of metal; employed 132 hands; produced to value of $189,614.

There were the following rolling mills and nail factories:*

Mills.	Weight of metal.	Value.
Union,	720,000	$43,000
Sligo,	400,000	32,000
Pittsburgh,	782,887	86,544
Grant's Hill,	500,000	20,000
Juniata,	500,000	30,000
Pine Creek,	457,000	34,100
Miscellaneous,	360,000	28,200

There were in operation 37 Steam Engines.

In 1836 there was given by authority quoted,† the following statement of rolling mills:

Mill.	Firm.	Tons pigs.	Tons blooms.	Bush. coal & coke.	Hands.	Engines.
Kensington,	Leonard, Semple & Co.	2,500	500	250,000	170	2
Pennsylvania,	Miltenberger & Brown,	3,500	1,500	360,000	110	2
Juniata,	G. & J. H. Shoenberger,	.....	4,000	180,000	90	2
Sligo,	Lyon, Shorb & Co.	.....	4,600	220,000	90	..
	Lippincott & Bro	.....	800	75,000	50	..
Bowen,	Smith, Royer & Co.	2,500	500	250,000	150	1
	Bissell & Co.	2,450	1,100	200,000	100	..
	Beelen & Co. / H. S. Spang & Son,	.....	4,500	41,500	240	..

Nine mills; 28,000 tons of pigs and blooms; 1,000 hands; 2,000,000 bushels of coal, and $4,160,000 produce.‡

Eighteen foundries, engine and machine shops, consuming 500,000

* Peck and Tanner's Guides, 1831. † Lyford's Western Directory.

‡ In this valuation is included, bar and sheet iron, shovels, axes, hoes, saws, steel, nails, spikes, wire, &c.

bushels of coal and coke, 12,000 tons of pig metal, 3,000 tons of sheet and boiler iron; employing 1,000 hands; produce $2,130,000 manufactures. Of these, McClurg, Wade & Co., Arthurs, Stewart & Co., Robinson & Minnis, Arthurs, Nicholson & Co., Bemis & Co., Stackhouse & Tomlinson, Warden & Benny, Freeman & Miller, Kingsland & Lightner, are nine of the firms—four being engine manufacturers, four foundries for all descriptions of castings. The eight used 6,500 tons of pigs, and employed 780 hands. Four of the engine shops turned out in the year, 56 engines and 158 boilers.

The following establishments are given from data collected from Lyford's and Harris' Directory, 1837, and other publications:

GLASS WORKS.

Style.	Firm.		Hands.	Value.
	Bakewell & Co.	Flint,		
Stourbridge,	Robinson, Anderson & Co,	"	65	$ 90,000
Pennsylvania,	Whitehead, Ihmsen & Phillips,	"	114	120,000
"	" " "	Black,	32	60,000
Birmingham,	C. Ihmsen & Co.	Vial,	32	38,500
"	"	Window,	26	38,500
	Park, Campbell & Hanna,	Flint,	40	50,000
	O'Leary, Mulvany & Co.	"	45	60,000
	Curling, Robertson & Co.	"	50	70,000
	S. M'Kee & Co.	Window,	40	38,500
	W. M'Cully,			
	W. A. Buchanan,	Window,		62,550
	F. Lorenz,			

COTTON FACTORIES.

Style.	Firm.	Bales Cotton.	Spindles.	Hands.	Looms.	Value.
Phœnix,	Adams, Allen & Co.	1,100	5,000	220	76	$150,000
Pittsburgh,	Blackstock, Bell & Co.	1,500	5,000	210	42	200,000
Hope,	Marshall, M'C. & Co.	1,500	5,000	200	...	180,000
Eagle,	Arbuckle & Avery,	1,300	3,600	150	...	150,000
Union,	George Beale,	450	2,200	70	...	50,000
Globe,	Lewis Peterson,	350	1,000	50	...	40,000
Total, 6.		6,200	21,800	900	118	$770,000*

Lyford gives the spindles of the same factories at 28,900; operatives at 1,030, and states that 2,100,000 yards of brown sheetings are made.

* Harris' Directory, 1837

BREWERIES.

Style.	Firm.	Hands.	Barrels.	Value
Point,	G. J. & P. Shiras,	20	6,000	$ 38,000
Pittsburgh,	Brown & Verner,	21	6,000	40,000
Wainwright's,	J. Wainwright,	4	1,000	6,000
Franklin,	Coltart & Dilworth,	9	2,500	16,500
Allegheny,	W. A. Irwin & Co	7	3,300	18,000
Total, 5		61	18,800	$118,500

LEAD FACTORIES.

	Kegs.	Pounds.	Value.
Avery & Ogden,	24,000	600,000	$ 60,000
H. Brunot,	8,000	200,000	22,000
B. M'Clean & Co	6,000	150,000	18,000
Madeira & Aston,	8,696	174,000	24,000
J. Hannen,	5,600	140,000	16,000
Daniel King,	4,800	120,000	14,000
Porter & Breckenbridge	7,000	175,000	21,000
Gregg & Hagner,	10,000	260,000	31,000
Total, 8	74,496	1,819,000	$206,000

ROPE WALKS.

	Tons hemp, &c.	Hands.	Value.
John Irwin & Son,	300	50	$100,000
Smith & Guthrie, (new,)	400	50	120,000*
Long & Co		7	30,000

In 1836, Mr Lyford, in his Western Address Directory, figures up the business of Pittsburgh as follows:

Steamboats,	$ 960,000
Rolling Mills, proceeds of	4,160,000
Iron Foundries, Engine or Machine Shops, proceeds of	2,130,000
Flint Glass Works, proceeds of	560,000
Window-Glass and Hollow ware, value of	700,000
Cotton Factories, proceeds of	500,000
Rope Walk, " "	80,000
Paper Mill, " "	20,000
Chemical Factories and Lead Works, proceeds of	241,000
Linseed Oil, value of	50,000
Ploughs, " "	174,000
All other manufactures,	6,000,000
Total,	$15,575,000

* Capacity.

In 1837, Harris' Directory sums up the manufactories of the city thus:

6 Cotton factories,	$770,000
8 White lead factories,	206,000
Manufactories of Birmingham,	2,491,000
6 Iron manufacturing establishments, and rolling mills, east of Monongahela,	1,957,500
9 Iron foundries,	500,000
10 Steam engine factories, and foundries attached,	700,000
7 Glass manufactories, east of Monongahela,	430,000
3 Rope walks,	250,000
3 Iron manufactories of saws, shovels, spades, hoes, axes nails, &c.,	230,000
Livingston's platform scale manufactory,	60,000
Ingersol's steam hat body manufactory,	11,250
All other manufactories and mechanical productions of the city and environs,	4,000,000
Total manufactories, &c.,	11,606,350

The mercantile business is summed up at,	$13,100,000
The commission business at,	5,875,000
The coal trade at,	565,200
Making a total of	31,146,550

In 1840 there were returned by the census of that year as in Pittsburgh, Allegheny, and Birmingham:

28 Lumber yards, with a capital of	$226,300
27 Furnaces and 7 forges, with a capital of	1,500,000
10 Glass Houses, and 6 glass cutting works, with a capital of	220,000
5 Cotton factories with 17,270 spindles,	
1 Pottery, 1 fulling mill, 6 tanneries, 5 breweries, 2 flouring mills, 1 oil mill, 1 rope walk, all of which employed a capital of	$2,111,390

CHAPTER XIV.

LUMBER.

The incident which it is just to consider as the commencement of that valuable portion of the business of Pittsburgh—the lumber trade, is thus recorded in "Craig's History of Pittsburgh:"

"Major Thomas Butler, then commanding (1795,) at Franklin, had informed Major Craig, that the very worthy and excellent Seneca Chief, Cornplanter, or Gyantawachia, as his name was spelled in signing the treaty, had at his saw-mill a large quantity of boards—an article much wanted for the service of the public. The Major therefore immediately dispatched Marcus Hulings, an experienced waterman, with three bags of money and some other articles, up the river to his place, to purchase all the lumber Hearing the next day that some private persons had gone on the same errand the Major dispatched James Beard, a trusty person, on horseback, with a letter informing Cornplanter of Hulings' object. Beard arrived in time and secured the lumber. The following is the reply of Cornplanter, given *verbatim et literatum:*

"GENESADEGO, 3d December, 1795.

"I thank the States for making me such kind ofers. We have made peace with the United States as long as watter runs, which was the reason that I built a mill in order to suport my family by it. More so because I am getting old and not able to hunt. I also thank the States for the pleashure I now feel in meeting them again in friendship. You have sent a man to make a bargain with me for a sertain time which I donot like to do. But as long as my mill makes boards the United States shall always have them in preference to any other, at the market price, and when you want no more boards I cant make blankets of them. As for the money you sent if I have not boards to the amount leave it and I will pay it in boards in the spring."

The rest of the chief's letter, as not apposite to this subject, is omitted, although an interesting composition.

In 1807 there were in Pittsburgh four lumber yards.

In 1812 the quantity of lumber brought down the Allegheny river and inspected at Pittsburgh, was 7,000,000 feet—worth about $70,000.

In 1817 we find the following record in Cramer's Almanack, of the timber trade of the Allegheny river:

"On Brokenstraw creek, Warren county, Pennsylvania, are fifteen saw mills, some of which use eleven saws. They cut on an average 3,000 feet of boards a day, and can be worked eight months in the year, making about 9,450,000 feet annually, worth in Pittsburgh, $100,000. On the Conewango, which rises in the State of New York, and empties into the Allegheny river above Brokenstraw, in the same county, our informant assures us that more than twice that quantity of lumber is sawed."

This account would make the lumber business of the Allegheny river then, and consequently of Pittsburgh, as at that period the product of all those mills was floated to this city, worth $300,000, and the number of mills about forty-five, producing 28,350,000 feet of lumber.

In 1831 the amount annually brought down the Ohio is estimated in "Peck's Guide" at 30,000,000 feet, worth in the neighborhood of $300,000.

The increased demand consequent upon the rapid progress of the population of the Ohio Valley and the manufactures of Pittsburgh, rapidly swelled the amount of lumber annually cut on the Allegheny and its tributaries, until the amount of lumber now run from that section and sawed upon their banks, has increased to an immense amount. About one-half of the entire "cut" of the mills is consumed at Pittsburgh; the remaining half is taken to ports below and sold. There are now in the city the following lumber dealers, whose names, locations of yards, and the year of the establishment of them, are given below in tabular form:

Firm	Location of yard.	By whom established.	Year
Willis Boothe,	No. Liberty street, Pittsburgh,	Willis Boothe,	1841
Brewer, Rynd & Co.	Cor. B'k Lane and Sandusky st. Alleg'y,	Brewer & Co.	1843
Wm. Dilworth,	Cor. 7th and Grant, Pittsburgh,	Thos. Scott,	1836
J. Dunlevy,	Chartiers street, Allegheny,	J. Dunlevy,	1855
Wm. Evans,	Point,	Wm. Evans,	1847
D. Euwer & Son,	No. 57 Penn street, Pittsburgh,	D. Euwer,	1851

John Herron,.....Cor. Hand and Penn, Pittsb'gh,.....John Herron,.1847
Herron & Pollock,.....No. 898 Penn street, " .....Herron & Co..1836
Dennis Leonard,.....No. Penn " " .....D. Leonard,....1828
Andrew Morton,.....Duquesne Way, near Hay, " .....A. Morton,.....1844
David M'Kee,.....No. 930 Penn street, " .....David M'Kee,..1850
McBrier & Son,.....Cor. Sandusky and N'th Alley, Alleg'y, W. McBrier....1837
McQuewan & Douglass,..No. Penn street, Pittsburgh,.....
Patterson & Evans,.....Rebecca street, Allegheny,.....
Chas. Rowan,.....Cor. 6th st. and Cherry Alley, Pittsburgh,Chas. Rowan,..1847
Rich'd Sill & Co.....Cor. Hand and Duquesne Way, " Herron & Sill,..1848
G. E. Warner,.....South Canal, near Chesnut, Allegheny, G. E. Warner..1828

The amount of Lumber piled by the above dealers was, taking the "run" of 1855—in this branch of business the low water curtailing largely the extent of their operations in 1856—34,000,000 feet, of which about 4,500,000 was clear stuff. The same firms purchased in same years 18,500,000 shingles. The value of which lumber was as follows:

Value of Lumber at River,.....$309,000 At Yards,.....$645,000
" Shingles " ..... 46,750 " 55,500

There are also in the city the following

SASH FACTORIES.

Firm.	Location.	By whom established.	Year.
Chambers,.....	Cor. Plum and Cherry alley, Pittsb'gh,	Same,.....	
Hill & M'Clure,.....	Cor. 7th and Grant street,	" "	1854
John B. Ingraham,.....	Rebecca, near Cory, Allegheny,.....	"	1852
Kelly, Glass & Co.....	Seventh, above Smithfield, Pittsburgh,	"	.....
Miller, Fryer & Johnston,	Marbury and Duquesne Way, Pitts.....	"	1856
C. & A. Stright,.....	Cor. Sandusky and Canal, Allegheny,..	"	1856
Jas. Mellinger,.....	Cor. 1st and Carson, South Pittsburgh,	"	1847
White & Alexander,.....	Marion Avenue, Allegheny,.....	"	1855
Geo. B. Yoest,.....	Cor. Marbury a'y & Mechanic st. Pitts'g.	"	1850

In these are manufactured all descriptions of doors and window sash, of which articles large quantities are shipped to the West, at a rate averaging 7½ cents a light for sash, and from $2 to $3 for doors.

These factories pile from purchases at the Allegheny river
2,832,000 feet of lumber, worth.....$31,152
" employ eighty hands, whose wages amount to..... 33,280
" turn out manufactures to amount of..... 78,000
The machinery employed in the business absorbs a capital of..... 6,642

There are in Pittsburgh the following

PLANING MILLS.

Style.	Firm.	Location.	By whom establ'd.	Year.
Allegheny,	John A. Bloomer,	Anderson & Lacock, Alleg'y,	Same,	1850
	W. H. Ewen,	Cor. Penn & Marbury, Pitt's'gh,	"	.....
	J. B. Hill,	Morris street,	" "	1850
Duquesne,	Heath & Co.	Marbury and Duques	" "	1856
Birmingham,	J. & A. Hays,	Ormsby & Water, Bir ng'm,	"	1856
	John B. Ingraham,	Rebecca, near Cory, legh'y,	"	1856
	Jas. Mellinger,	Cor. 1st & Carson, S itts'gh,	"	1847
	Patterson & Evans,	Rebecca, Alleghen	"	1854
Union,	Union Planing Mill Co.	Marion Avenue, A gheny,	"	1857

The above nine mills pile from the Allegheny river 19,000,000 feet of lumber, worth $208,000
They employ 120 hands, whose wages are 76,584
" produce 12,220,000 feet of planed flooring, worth 268,800
" sell 6,680,000 feet of lumber, worth 102,000
" have in buildings, machinery &c. capital to amount of 104,000
" consume 30,000 bushels of coal a year, ... 1,500
" keep twelve steam Engines running.

The planed flooring of these mills are shipped to a heavy extent to nearly all sections of the West, beside supplying the home trade, at the rate of $22 per thousand feet, planed, grooved and tongued.

There are also eight

SAW MILLS.

Mill.	Firm.	Location.	By whom estab'd.	Year
	Dewhurst & Hays,	Cor. Main & Bk. Lane, Allegheny,	G. E. Warner,	1832
Telegraph,	A. H. Harvey & Co.	Duquesne Boro	Same,	1855
Duquesne,	John Morrison,	" "	"	1849
	Morrison, Stewart & Co.	" "	"	1856
Outlet,	Nease & Nixon,	Craig st. Allegheny,	Smith & Darsie,	1830
Manchester,	I. & A. Patterson,	Manchester,		
Point,	Samuel Wickersham,	Penn b. Marbury, Pitt'g	T. Wickersham,	1831
Lawrenceville,	R. & S. Wightman,	Lawrenceville,		

These eight saw mills employ seventy men, whose yearly wages amount to $26,250
They consume 50,000 bushels of coal, ... 2,500
The capital in buildings is $24,800
" " machinery, 35,000
59,800

These mills keep nine steam engines running, and
consume 1,680,000 cubic feet of timber, worth... $134,400
Producing 13,800,000 feet of boards, " ... 227,000
" 5,800,000 laths, " ... 14,500

The various Cabinet Shops of the city also pile 2,500,000 feet of boards of the various species of wood used by them, worth $50,000. The lumber business of Pittsburgh would therefore sum up thus:

	Feet of Lumber.	Lath and Shingles.	Value.
Cabinet Shops,	2,500,000		$ 50,000
Saw Mills,	13,800,000		227,000
" "		5,800,000	14,500
Planing Mills,	19,000,000		370,800
Sash Factories,	2,832,000		78,000
Lumber Yards,	34,500,000		645,000
" "		18,000,000	55,500
			$1,440,800

The foregoing figures show the value of the Allegheny lumber trade so far as the immediate supply of lumber for this market is concerned; beyond that there is an amount of lumber which is equal to one-half—some parties conversant with the subject say three-fourths, of the whole "cut" of the Allegheny region goes to down river markets. Assuming, for the sake of being within the limits, as has been the endeavor in all values given in this volume, that the quantity is one-half, there is an amount of lumber equal to that given for the trade of Pittsburgh, which is run from the Allegheny and its tributaries to the principal ports below—say 72,632,000 feet, worth $1,790,800.

This production comes ultimately to Pittsburgh, in shape of payment for supplies for the various mills.

The entire value then of the Allegheny lumber trade is:

Amount sold at Pittsburgh, ... $1,440,800
" " " down river ports, ... 1,790,800
$3,241,600

The cost of stocking, cutting, rafting, and running this amount of lumber is about $6 per thousand feet when delivered at Pittsburgh, and from $7.50 to $9.00 delivered below. By stocking is

meant the felling of the timber in the forest, and hauling it to the mill; for which labor the average rate of payment is $1,50 per thousand feet. By cutting is meant the sawing of the timber into boards; and by rafting, the placing and securing the same in rafts, which two labors are rated at $1.50 per thousand feet. The cost of running or navigating the rafts to Pittsburgh, is from $2.50 to $3 00 per thousand feet. Where persons not owning timber lands desire to go into the lumbering business on the Allegheny streams, it is customary for them to rent a privilege from some land owner to cut the timber on his land, for which the rentee pays from $3 to $5 per thousand feet, the land owner finding the mill, and the rentee paying for or doing all the labor. The hands required to run one saw night and day, or double turn, as it is termed, are six.

The price of boards is almost yearly on the increase. In 1832, the best quality of pine boards was sold in this market for $4.50 a thousand at the river; and not more than ten years ago they were selling at $5 per thousand. Pine boards are now worth, by the raft, in the water at the Allegheny wharf, $12 per thousand feet.

The pine timber land in the Allegheny valley is also rapidly enhancing in value as well as the lumber. Ten years ago the best timber tracts could be bought at from $1 to $6 per acre, according to their location and distance from good rafting streams. The same quality of land is now worth from $5 to $25 an acre; and the value of the entire timber region of the Allegheny is increasing at a yearly rate of 33⅓ per cent.

In these days of western land speculation, it might be well for all who have capital to invest in such enterprises, to bear in mind the few facts we have stated about the lumber trade of Pittsburgh, and give a further examination to the subject. There are no western lands that are more steadily rising in value; and with the consumption and demand for pine lumber, the same increase will continue in proportion as the demand enlarges and the supply diminishes.

In addition to the Allegheny lumber region, there are at the head waters of the Monongahela, dense forests of the finest pine timber, which have as yet not come into the market, owing to the difficulties of navigation; yet that that region will become equally valuable in a few years there can be no doubt, as the rapidly increasing price of good pine timber lands will justify greater expense in bringing

it to market and consequently expenditure of capital by private individuals, or public companies in clearing the head waters of the Monongahela of such obstructions as now prevent the running of lumber.

The Pittsburgh and Connellsville Rail Road, which penetrates into the same region of country, will add to the resources of the lumber trade of Pittsburgh. In Somerset county there are large sections of unsurpassed pine and hemlock. In 1853 the lumber business of that county was estimated at $300,000, most of which found an outlet to the East and tide water by the Chesapeake and Ohio Canal.

The products of the mills of Allegheny county, Maryland, and those which will arise from the forests of pine timber in Fayette county, Pennsylvania, will also largely swell the value of the lumber business of Pittsburgh.

CHAPTER XV.

SALT.

As an article of trade, salt is one of the staples of Pittsburgh; and although from the low price at which it is sold it does not present so imposing a front as some other articles, yet it is deserving of a distinct and separate mention, as one of the sources of her wealth. Until the beginning of 1796, Pittsburgh was supplied with salt from the eastern cities, packed across the mountains on horses, and in wagons, at a high rate of freight. In the beginning of that year Quartermaster-General James O'Hara had occasion to visit Niagara. He there ascertained that salt could be brought to Pittsburgh cheaper from the Onondaga works in New York state, than from the eastern cities. And he was instrumental in causing large quantities to be brought by way of the lake to Erie, and thence to Pittsburgh, by Le Bœuf and French creeks and the Allegheny river. The supply from this source was continued until 1810, when the manufacture of salt on the Kenhawa came into competition with the New York works, whose supply was in 1812 entirely cut off by the war. The opening of the salt works on the Kiskiminetas and the Allegheny, produced a third revolution in the

salt trade. Of the opening of the salt wells of the Kiskiminetas the following account is given by the Hon. Walter Forward, in 1817, in an article on Western Pennsylvania, published in "The Magazine Almanack" of that year. "About 30 miles north-east of Pittsburgh, in the margin of the Kiskiminetas on Conemaugh river, a navigable branch of the Allegheny, a body of salt water has been discovered nearly as strong as brine, and sufficiently large to furnish salt for a million of inhabitants. William Johnston, a man whose enterprise deserves to be held in grateful remembrance, began to bore for salt water on the beach of the river at low water mark in 1812–13, under circumstances of the most discouraging, and against the remonstrances of the neighborhood, who ascribed his undertaking to folly and madness. With an auger 2½ inches in diameter, he perforated the rock to the depth of nearly 200 feet: at a time when hope was sinking in despair, and all hands were about relinquishing the undertaking, a large vein was struck. No sooner was the auger withdrawn than the salt water spouted six or eight feet into the air. A copper tube was then procured, and sunk so deep as to exclude the fresh water, and the salt water received in wooden tubes and conducted under the surface of the beach to a large reservoir at the bend of the river. As soon as furnaces could be erected, the operation of boiling salt commenced. * * * * * * Four large establishments are now erected and in operation, and yielding from 24 to 50 bushels of salt a day. Two or three others will be completed in two or three months."

The mineral formation of the Western Pennsylvania salt region, renders it, from the great abundance of coal and the ease with which it is mined, one unsurpassed for advantages in the prosecution of the manufacturing of salt—the great article fuel not costing more than three cents a bushel. Pittsburgh is the market to which the salt works look, not only for the sale of their production, but also to purchase their supplies.

In 1834,	the	inspection	of	Salt	in	Pittsburgh	was	34,381 barrels.
" 1835,	"	"	"	"	"	"	18,273	"
" 1836,	"	"	"	"	"	"	17,460	"

The salt works in the vicinity of Pittsburgh are principally situated in Allegheny, Armstrong, Indiana and Westmoreland coun-

ties. The data from whence the following statistics are made up was furnished by the firm of J. M'Cully & Co. of this city.

Counties.	No. Works.	No. Hands.	Bushels Coal Consumed.	Barrels Salt.	Capital.
Allegheny,.....	12	81	884,000	64,500	$152,500
Armstrong,.....	13	65	487,000	32,800	66,000
Indiana,.....	5	20	86,000	10,000	30,000
Westmoreland,.....	19	76	474,000	38,500	74,000
Total.....	49	242	1,931,000	145,800	$322,500

The expense and production in dollars would stand thus:

242 men..... .$72,600
1,931,000 bushels coal.....67,585

$140,185
145,800 bbls. salt..... .....$187,200

Of this production there is delivered at Pittsburgh an average amount of 105,000 barrels, having a value of $130,000. The remaining 40,000 barrels are shipped to other points, and meet the wants in the immediate vicinity of the various works. The entire value, however, finds its way into Pittsburgh, from the fact that it is the market whence they derive their supplies.

CHAPTER XVI.

IRON.

The manufacture of Iron is antediluvian in its character, Tubal Cain being admitted to have been the first producer of that metal; but the scale of manufacturing was, up to the days of Homer, of so small an extent, that at the games in honor of the death of Patrocles, the most precious prize was a piece of iron which a single man could throw. And it is recorded that when Porus came from the east, from the land of gold and of pearls, to propitiate Alexander the Great, his most valuable gift was a piece of Indian iron weighing forty pounds.

It is thought the Crusaders brought back with them a knowledge of manufacturing cast iron; but although that knowledge was early put to use in Europe, yet the progress was so slow that in 1740, only 117 years ago, the whole production of England was made from fifty-nine furnaces, averaging 249 tons each, or a value of 17,350 tons. In 1856 it was calculated by Abram S. Hewitt, that the consumption of iron was

Nations.	Production per head.	Consumption per head.
England,	287 lbs.	140
United States,	84 "	117
France,	40 "	60
Sweden and Norway,	92 "	30
Belgium,	136 "	70
Austria,	12½ "	15
Russia,	10 "	10
Switzerland,	00 "	22
Prussia,	50 "	50
Germany, Zollverein,	50 "	50
Spain,	4½ "	5

The same authority computes that from the ratio of increase in

115 years, during which time it increased seventeen fold, the next century would show a demand requiring an annual make of 140,000,000 tons. The consumption of iron is so rapidly increasing, that it requires shorter periods for the doubling of the production from a given date. In Great Britain, commencing at 1806, it required until 1824, or 18 years, to double the amount consumed at the former date. In 1836 it had again doubled, being only twelve years. In 1847, eleven years, it had doubled again; and in 1855, a period of eight years, it had reached 3,500,000 tons, being an increase of 1,500,000 tons in that time, at which rate it would double in ten years.

The following table, taken from a lecture by Abram S. Hewitt, gives the production of various countries, at the dates specified:

		Tons.
England,	1855	3,585,906
France,	1845	650,000
Belgium,	1855	225,000
Russia,	1851	300,000
Sweden,	1852	157,000
Norway,	1855	22,500
Austria,	1847	165,765
Prussia,		400,000
Germany,		200,000
Elba and Italy,		72,000
Spain,		27,000
Denmark, and balance of Europe,		20,000
United States,	1856	1,000,000

By the foregoing tables of production and consumption, it will be seen that the United States is the second nation in the consumption and yield of iron. The iron product of Pennsylvania in 1849 was 253,370 tons, and the make in 1856 it is estimated reached about 380,000 tons, being 38 per cent. of the whole estimated product of the United States, and larger than any nation of Europe, excepting England, France and Prussia. The report of the committee on statistics of the Iron Convention of 1850, gives the number of furnaces and bloomeries in the State, at 304, with a capacity, at that time, of 550,959 tons.

The present sources from whence Pittsburgh draws her supply of pig iron, are,

First, The Allegheny region, from whence she receives hot and cold blast charcoal metal. This metal is of various qualities, usually inclining to cold short, but the best sorts are of both hot and cold, and are strong in wrought iron: most of it is useful for correcting the red shortness of the anthracite metals; when gray it makes fine castings.

Second, The Anthracite region. The metals of this region are usually red-short, though there are exceptions, and nearly all make excellent castings when gray, (No. 1 grade,) and strong wrought iron when mottled, (Nos. 2 and 3.)

Third, The Hanging Rock region. From this district, 346 miles from Pittsburgh, on the Ohio river, a fine quality of charcoal metal, making good castings and wrought iron, is brought largely by river to Pittsburgh.

Fourth, From Tennessee. From this State large quantities of charcoal pig, of various qualities, are brought to this market.

Fifth, From the Juniata region. From this section charcoal metal of a very superior quality is obtained, but at the present time in very limited quantities, most of it being turned into blooms before it comes into the market.

From the Monongahela river section of country, from Missouri and a few other sources, a limited supply is obtained. The coke iron consumed by the manufactories of Pittsburgh, is at present obtained both from a distance and from the neighborhood. The metal of this description made from the Fossil ore of the central counties of Pennsylvania, is excellent for castings. The production of this quality of pig is now confined to a few furnaces, but the deposits of this class of ore in the State being immense, there will probably be a large and rapid increase in its production. From the neighboring counties of Fayette, Cambria, Beaver, Mercer, and Lawrence, coke metal is now brought to Pittsburgh; some of it making very fair castings.

From this cause, the introduction of metal smelted with coke or raw coal, it is reasonable to anticipate that in a short time a revolution will be effected, giving to the iron manufacture of Pittsburgh, in all its branches, an impulse, the extent and results of which it would now be premature to estimate. For though one might go below the truth, yet they would be above belief. In England the ores of the coal measures, smelted upon the spot where they are mined, have furnished the iron which, from its

cheapness, has commanded the markets of Europe. A similar result will arise in this country, when the ores of the American coal measures are fully understood, and properly worked; and from the superior quality of its fuel, the Pittsburgh coal region will take the lead.

If Pittsburgh has been able heretofore, from the cheapness and excellence of her fuel, to bring from such various and great distances, pig metal and (excepting the eastward,) to send back bar iron and castings to compete at home with the local mills and foundries, she will do it still more successfully, if she can find her supplies of metal in her own vicinity. Until recently it was not imagined that the ores existed in large quantities in this vicinity, except in a few cases, as the Cambria iron works location. Now, the best informed persons believe that many such locations can be found. If to the above named neighboring counties, we add Butler, Armstrong, and Westmoreland, all known to possess large deposits of ore, we have a belt of counties which either already have coke furnaces, or known locations where they would be successful.

Considering how little skilled research has been brought to bear upon this matter, the commencement already made is really surprising, small as it is. The carbonates of the coal measures, unlike most other ores of iron, are often difficult of detection, except to the practiced eye. The attention of but a few individuals, here and there, has yet been attracted to this subject, and not one-tenth of the whole region within a circuit of 60 miles of Pittsburgh, has been really explored at all. The great profits which will be reaped by the well located of the coke furnaces now running, or shortly to be erected, will, it may safely be expected, lead to a general development of whatever mineral wealth of this description we really possess. Time only can determine whether it will prove as great as we are led to expect, from the general geological formation, the marked presence of iron in nearly every rock, and the rich deposits already casually hit upon, through a circuit of counties clustered about us.

One reason for the languid interest until recently felt in the coke metal manufacture, was the fact that the production was of very inferior quality, and was unskillfully worked at the mills. Later experience, both at the blast furnace and the puddling furnace, have obviated this difficulty, and a satisfactory quality is

now made. The same early delays and trials attended the first attempts in England, and embarrassed the beginning of the anthracite metal manufacture in this country. The following facts will serve to give some idea of the importance of this change in the method of producing Pig Iron.

Charcoal pig, to be sufficiently profitable to maintain its manufacture on a large scale, insuring steady production, must be worth $25 at the furnace. The furnace sites are necessarily isolated from main channels of transportation, so as to command large tracts of cheap woodland, and the conveyance is hence costly, from actual freight charges, and from uncertainty and danger attending its delivery in market. Hence $30 per ton in Pittsburgh is as low a price as will support this mode of production profitably. Past experience shows this.

Anthracite pig can perhaps be made in Eastern Pennsylvania for $20 per ton at the furnace, and yield profit enough to make the production permanent. Much lower than this it can never go. The coal is costly to mine, is not found in the same locations with the ore, and is salable at high prices for other purposes wherever mined. Here is a natural barrier forbidding forever the rivalry of anthracite with bituminous coal in the cheap working of iron. Call the freight of the anthracite pig $5 per ton—$25 per ton then, delivered in Pittsburgh, may perhaps sustain this mode of manufacture. Prices, both of metal and freight, have heretofore r uledhigher.

Coke pig, where as is now the case, ore coal and flux are mined out of the same or adjacent hills, can be made for $12 to $13 per ton. Near any of the rail roads, and within 60 miles, it can be delivered for $1 per ton. Sold at $17.50 per ton, it would yield a profit sufficiently handsome to cause the employment of enough capital to create an immense production.

Buying metal at $17.50 per ton, the foundries could then sell castings at two cents per pound and realize the same profits as now at two and a half cents, which may be taken as the current price, with the average cost of metal at $27.50 per ton. The rolling mills could sell bar iron at two cents per pound here, or deliver it on the sea-board at two and a quarter cents, which is about the same rate as the English ton at $50. The products of the iron foundries and mills of Pittsburgh could then enter successfully the eastern markets.

Such prices can only be profitable where coke metal of good quality is worked with the cheapest and best of bituminous coal, but under these conditions it must supplant in a great measure all the other modes of manufacture. The resulting demand cannot well be estimated, but if to the increasing wants of the West, be added the opening of the markets of the sea-board and of the South, some conception may be formed of the result, to Pittsburgh and the country at large, of the development of the manufacture of coke pig metal.

Out of the 304 furnaces and bloomeries in the State in 1850, those of the western counties, 63 in number, find their exclusive market here, and a majority of those in the East send large quantities of their metal to this city. Not only from the furnaces of her own State does Pittsburgh procure iron for the use of her rolling mills, her foundries and her engine shops, but, as previously shown in this chapter, from Ohio, Kentucky, Tennessee, Missouri, and the far off shores of Lake Superior. The tables of production and increase in the various branches of iron manufacture in this city show at their proper place in this volume, how steadily the demand for iron has enlarged the business in Pittsburgh. In a foregoing paragraph in this chapter, it is stated on the authority of A. S. Hewitt, Esq., of New York, that if the consumption continues to increase in the ratio of the last 117 years it will require 140,000,000 tons yearly to supply the demand in the next century. The question at once arises, where is the immense quantity to be made? To solve this question, there is a certain condition of things to be considered. First, is required an adequate supply of the raw materials: then a location of those materials that will enable them to be cheaply brought together; for as previously stated in other chapters of this volume, the value of raw material does not lay so much in what it is, but where it is. There must be cheap and extensive means for transportation to market, also a sufficiently populous country to render labor attainable at a reasonable cost; and likewise skill to manage such works as may be erected in an economical manner.

All these requisites exist in the western and eastern iron counties of which Pittsburgh is the focus; and it is obvious that in the solving of the question, of from whence will come the immense increase required by the calculation of Mr. Hewitt, that the country mentioned must aid largely in supplying any such

demand; and that Pittsburgh will consequently increase wonderfully in furnishing her quota of the demand. For not only in the manufacture of pig iron, are the requisites just mentioned required, but in the manufacture of metal into merchant bar, the various qualities of steel, and the multiform productions of the foundry and the machine shop. For the rapid, large, and cheap production required for the profitable conversion of metal into the articles arising from the various manufactories just instanced, Pittsburgh possesses in the highest degree that condition of things already specified, as necessary to the production and manufacture of iron. That the prospect of increase in the use of iron fully justifies the estimate of Mr. Hewitt, no one can doubt who carefully considers the various trades whose every movement demands iron : who takes into view the rapid strides which civilization is making over the earth, and the consumption of iron it demands as it goes: the hundreds of new inventions consuming iron, which are yearly giving ease to the labor of man, safety and comfort to his existence, and wealth to his coffers : who attentively follows out the demand after demand for iron which the construction of a single rail road creates, the building of a steamer, the erection of a factory, or the upspringing of the hundreds of villages in the West and elsewhere, and their consequent business.

The production of a ton of iron foretells to the careful observer not the satisfying of a demand, but rather the creation of other demands, from the very necessity which arises in its consumption, to consume more in order to properly apply the first production to its designed uses. The laying of a rail way does not imply the completion of a supply, and the destruction of a demand; but rather the creation of an agent whose ever existing necessity will imperatively demand a daily supply, working to the raising up of fresh demands "which grow by what they feed upon." With 23,000 miles of rail way, which the United States possesses, the annual consumption to keep them in repair will be, it is estimated, 690,000 tons, or ten per cent. of the original outlay; and in a large proportion of the instances where iron is the foundation or the supporting element of a business, a necessity, or a convenience, the same results follow as the workings of a rail way exemplify. It has been stated that the future millionaires of America will be found among the iron and coal mines of Pennsylvania. That they will be found among the rolling mills, the foundries, the machine

shops, the coal companies of Pittsburgh, there can be no doubt. A reference to the various chapters treating in this volume of those requisites, supply of raw material, facility for its concentration, for manufacturing, and for distribution, will at once convince how surely nature designed the location of Pittsburgh for the focus of a huge manufacturing district, and how skillfully the cunning hand of man is improving it by rail roads, by canals, and by rendering yet more available the rivers.

The tremendous increase in the production of iron by Great Britain has been the result, not so much of want in other countries of the material, or the capability of production, but that England was the best market; rendered so by the cheapness of labor. In the rapid increase of consumption of iron, a point will be reached in which the natural resources of Great Britain in material and labor will be overtasked, when, the probabilities are, the United States will come into an equal if not superior position as a supplier of iron to the world.

The price of coal and iron stone has doubled in Great Britain in the last three years, and the price of labor has materially increased. The Russian war, and the financial troubles consequent in England thereon, have had no perceptible effect in the price of iron. Although the natural result in former days would have been to create a fall, the increased cost of production would not permit of any material reduction. This single fact is indicative of the approach of that point at which the United States will take rank above all other nations as a supplier of iron. Of which assertion, the fact that her ores and her coal strata are of sufficient extent to enable her to produce 50,000,000 tons with the same drain on her natural resources as Great Britain can produce three and a half million, is conclusive. Beside which "from the greater richness of the ores in the United States, and the more general use of anthracite coal, the same results could have been achieved with less than half the quantity of raw materials, thus economizing labor to an enormous extent. In point of fact, the materials for making a ton of iron, can be laid down in the United States at the furnace with less expenditure of human labor than in any part of the known world, with the possible exception of Scotland."*

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*Hewitt's Lecture before the Statistical Society, New York, 1856.

The position which Pennsylvania would attain in such a state of trade is apparent from her 15,000 square miles of coal and the deposits of the various iron ores which accompany it in every direction; and the rank of Pittsburgh is easily deducible from the remarks and the data given in this and previous chapters. More capital is sorely needed in Pittsburgh, to improve her vast iron privileges; and we commend the facts in relation to them to the more than serious thought of capitalists,—to their close personal examination.

Although the consumption of iron enters more or less into all the business of Pittsburgh, yet her iron manufactures are understood to comprise the product of her rolling mills, her foundries, and her machine shops.

Foremost in the list stands the rolling mill. To Henry Cort, an Englishman of education and fortune, the world owes the invention, without which rail roads would not have been built, and many other daily uses of iron would have been impracticable—because without its aid the production now required by civilization would have been impossible. Although Henry Cort was pecuniarily ruined, and died broken-hearted, the British nation has been an immense gainer by his invention. It is estimated that the whole saving to the nation was, a few years ago, £300,000,000, beside feeding and clothing four generations of workmen and their families, or more than 600,000 people for sixty-six years.

In 1782, previous to the invention of the rolling mill, the quantity of British hammered iron exported did not exceed 427 tons—in 1854 there were exported 1,470,723 tons. In 1782 the make of hammered iron in Great Britain did not exceed 10,000 tons—in 1853 the total make of puddled and rolled iron was nearly 3,000,000 tons.

The following table shows the increase in the production of pig iron in the United States:

Year.	Tons.	Year.	Tons.
1771,*	7,525	1846,	765,000
1810,	54,000	1847,	800,000
1828,	130,000	1849,	650,000
1830,	165,000	1850,	564,755
1832,	200,000	1856,	1,000,000
1840,	347,700		

* Imported into England—being one-sixth the entire imports by that country, of all kinds. For ten years previous it had averaged 2,360 tons a year.

In Pennsylvania, the make of iron is exhibited from 1828 to 1846, by the following table from Taylor's Statistics of Coal:

Years.	Blast Furnaces.	Forges and Rolling Mills.	Pig Iron, tons made.
1828,	44	78	24,822†
1830,	45	84	31,056†
1842,	213	169	151,885
1843,	—	"	190,000
1844,	—	"	246,000
1846,	317	"	368,056

In 1850, a committee of the Convention of Iron Masters reported:

298 Furnaces, producing	388,705 tons,	in 1847
6 Bloomeries, "	545 "	" "
	253,370 "	" 1849
	198,813 "	" 1850

In 1856, the make of the Pennsylvania furnaces was estimated from 300,000 to 380,000 tons.

In 1850, the number of rolling mills in Pennsylvania was reported to the Convention of Iron Masters at—

	Mills.	Puddling Furnaces.	Heating Furnaces.	Nail Machines.	Produce, tons.
Eastern Pennsylvania,	56	247	164	252	91,598
Western "	23	187	128	330	72,132

Of which number eight were in Philadelphia, thirteen in Chester county, and sixteen in Pittsburgh.

The increase of the Pittsburgh mills is shown in the following statement:

Progress of Rolling Mills from 1808 to 1854.

1808,	There were	4 Nail Factories, making 200 tons of Nails.	
1810,	" "	6 " " " Nails to the value of	$ 49,890
1813,	" was	1 Rolling Mill erecting.	
1817,	" were	7 Nail Factories, 47 hands,	174,716
1810,	"	" 4,900 tons of bar and sheet iron sold in the Pittsburgh market.	
1829,	" "	8 Rolling Mills, using 6,000 tons blooms, 1,500 tons pig iron, and employing 300 hands.	
"	" "	9 Nail Factories, employing 150 hands, and producing 18 tons of nails.	
1830,	" "	9,282 tons of iron rolled.	
1831,	" "	6 Rolling Mills, using 1,860 net tons of metal.	

† Returns much underrated.

1836, There were 9 Rolling Mills, using 10,950 tons pig, 17,500 tons blooms, consuming 2,000,000 bushels of coal, and employing 1,000 hands.

1837, Harris' Directory gives the value of the production of five of the Rolling Mills at.....1,497,500

1850, Fahnestock's Directory says :

"There are in Pittsburgh thirteeen Rolling Mills, with a capital of about $5,000,000, and employing 2,500 hands. These mills consume 60,000 tons of pig iron, and produce bar iron and nails amounting to $4,000,000 annually."

1854, There were, according to C. A. McKnight, in Pittsburgh, 19 Rolling Mills, having 176 puddling, 121 heating furnaces, and 253 nail machines ; consuming 98,850 tons of pig, blooms and scraps, employing 2,720 hands.

The details of the foregoing exhibit of the progress in the rolling mill business of the city, are gathered from various sources, and many of them were apparently loose estimates, made from general, not special data.

In 1857, there were in Pittsburgh twenty-five iron and steel rolling mills, as shown by the table on the following page.

TABLE showing the ROLLING MILLS in Pittsburgh, in 1857.

Styie of Works.	Styie of Firm.	Location and St.	When established.	Who by.	Puddling Furnaces.	Heating Furnaces.	Nail, Spike & Rivet Machines.	Mills.	Convert'g Furnaces.	Converting Capacity, each.	Manufacture
American,	Jones & Lauth,	98 Water	1853	Jones, Lauth & Co.	20	11	27	1	...	.....	Iron.
Birmingham,	M'Knight & Bro.	111 "	1841	Wood, Edwards & M'Knight.	13	7	21	1	...	.....	Iron.
Clinton,	Graff, Bennett & Co.	97 "	1845	A. Plummer & Co.	20	8	21	2	...		Iron.
Duquesne,	Coleman, Hailman & Co.	121 "	1846	Coleman, Hailman & Co.	17	8	30	1	3	150 tons, 3 weeks.	Iron, Steel.
Etna,	Spang & Co.	91 "	1828	Spang & Son.	14	12	21	1	...		Iron.
Eagle,	Jas. Wood & Co.	113 "	1850	Jas. Wood & Co.	20	10	38	1	1	40 ditto.	Iron, Steel.
Eagle Steel,	.....	.....	.....	.....	...	...	...	1	2	80 ditto.	Steel.
Juniata,	G. & J. H. Shoenberger,	93 "	1826	Dr. P. Shoenberger.	19	13	51	3	1	50 ditto.	Iron, Steel.
Kensington,	Lloyd & Black,	99 "	1845	Rebuilt, Freeman & Miller.	12	7	13	1	...	.....	Iron.
Kittanning,	Brown, Floyd & Co.	108 "	1847	Kittanning Iron Works Co.	12	8	16	1	...	.....	Iron.
Lorenz,	Lorenz, Stewart & Co.	62 "	1850	Stewart, Lloyd & Co.	13	6	19	1	...	.....	Iron.
M'Keesport,	Wood, Moorhead & Co.	134 First	1851	W. Dewees Wood.	...	6	...	1	...	.....	Galv. Iron.
Pittsburgh,	Zug & Painter,	96 Water	1836	Lorenz, Forsythe & Cuddy.	19	11	...	1	...		Iron.
Pittsburgh Steel,	Jones, Boyd & Co.	Cor. Ross & 1st.	1835	Isaac Jones.	...	...	...	1	4	160 tons, every 15 days.	Steel.
Pennsylvania,	Everson, Preston & Co.	94 Water	1844	Everson & Co.	11	7	1	1	...		Iron.
Sligo,	Lyon, Shorb & Co.	121 "	1825	Stewart & Lyon.	15	10	...	2	...	.....	Iron.
Sable,	Zug & Painter,	96 "	1828	Zebulon Packard.	18	11	36	1	...		Iron.
Sheffield,	Singer, Hartman & Co.	82 "	1848	Singer, Hartman & Co.	4	9	...	1	5	165 tons, every 18 days.	Steel.
Tack & Nail Fact'y,	Chess, Wilson & Co.	119 "	1842	Campbell & Chess.	3	7	80	1	...		Iron.
Vesuvius,	Lewis, Dalzell & Co.	110 "	1845	Lewis, Dalzell & Co.	18	7	37	1	...	.....	Iron.
Wayne,	Bailey, Brown & Co.	120 "	1829	F. H. Oliphant.	14	7	37	1	...	.....	Iron.
					262	165	448	25	16		

These mills consume,

		Value.
105,333	tons Pig Iron,	$3,159,990.00
27,267	" Blooms,	2,181,360.00
4,931	" Scrap Iron,	186,440.00
2,550	" Swedes and Rolled Iron,	178,500,00
6,187,515	bushels of Coal,	251,500.60
118,000	" Coke,	5,900.00
5,040	tons Fire Clay,	21,500.00
2,095,000	Fire Brick,	41,900.00
9,258	tons Ore,	120,696.00
51,800	gallons Oil and Grease,	53,034.00
	Small items to amount of	43,000.00
	Total,	$6,243,820.60
	They employ 4,623 hands, whose yearly wages amount to	2,366,020.00
	The capital in the ground, buildings and machinery employed in prosecution of the business, is	3,280,000.00

They produce as follows:

		Value.
3,212½	tons Boiler Iron,	$ 388,712.00
67,100	" Bar, of various sizes,	4,697,000.00
5,637	" Sheet Iron,	681,077.00
699,762	kegs Nails, Spikes and Rivets,	2,797,048.00
10,000	boxes Tacks,	50,000.00
800	tons Galvanized and Imitation Russia Iron,	96,000.00
10,850	" Blister, Plow, Spring and Cast Steel,	1,747,850.00
2,500	Crow Bars,	5,000.00
1,500	Sledges,	1,875.00
	Axles to amount of	80,500.00
	Springs " "	135,000.00
	Vices " "	50,000.00

In addition to the above articles, one of the mills (Ætna,) produces large quantities of wrought iron gas pipe or tubing, of the best quality. The firm were unable to give statistics of the production of this article. They have been, for six years, engaged in the business, and manufacture the tubes of sizes from ⅛ to 4 inches (outside,) diameter. It is the only factory of the kind west of the mountains, and supplies the western demand to a large extent.

THE FOUNDRY BUSINESS

Is the next in importance in the iron manufacture of Pittsburgh. The first foundry which was started in the western counties of Pennsylvania was Trumbull & Marmie's furnace, which was situated on Jacob's creek, fifteen miles from its mouth, and went into blast on the 1st of November, 1790.

In 1804 the first iron foundry was established in Pittsburgh, by

Mr. Joseph M'Clurg. The growth of the foundry business in this city from that time was steady, and at periods rapid. At the present day, they rank second in the iron business of Pittsburgh, in the amount of capital invested, extent of ground and buildings occupied, and number of hands employed. The variety of their staple castings is large; and there is no description of foundry work which the skill, facilities and resources of the firms engaged in the business does not justify them in undertaking. Heavy mill gearing, rail road castings, copper mining machinery, rolling mill castings, cotton and sugar mills and presses, cannon, plows, chilled wheels, shafts, machines for punching, drilling, and planing iron, &c., &c., hollow ware, stoves, grates, platform and other varieties of scales, steam engine work, a long list of articles known as domestic hardware, and in fact every description of form, which the necessities and the luxuries of the Great West demand, are daily turned out from over forty foundries located in this community. A circumstantial account of the numerous articles cast, and a history of each of the foundries, with however so brief mention of interesting matters connected with them, would occupy more space than it is convenient to devote to the whole iron business of Pittsburgh, and we content ourselves with simply exhibiting in tabular form the progress of the foundry business, from 1804 to 1857, showing the number of foundries, hands, and tons of metal consumed.

Year.	Foundries.	Hands.	Tons metal consumed.
1804,	1	——	——
1810,*	2	——	400
1815,†	3	——	——
1817,‡	4	87	——
1825,§	8	——	——
1829,§	9	225	3,500
1836,‖	18	1,000	12,000
1850,¶	30		20,000
1854,**	38	1,765	28,525

In 1857 there are in Pittsburgh the foundries given in the table on opposite page. They are those whose business is simply the converting of metal into castings, and who do not re-use their own castings to manufacture steam engines, plows, domestic hardware, &c., &c.

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* Census, by U. S. Marshal.
† Directory of Pittsburgh, 1815.
‡ Census taken by Councils.
§ Pittsburgh Gazette.
‖ Lyford's Western Directory.
¶ Fahnestock's Directory, 1850.
**. Charles M'Knight, in Hunt's Magazine, 1854.

TABLE showing the FOUNDRIES in Pittsburgh, in 1857.

Name of Foundry.	Style of Firm.	Office.	Year establis'd.	Who by.	Cupolas and Air Furnaces.	Yearly capacity in tons.
Berlin,	William Price, Jr.	Cor. Price & Pa. Avenue...	1813	William Price	1	1,000
Eagle,	Payne, Bissell & Co.	235 Liberty Street.	1827	Arthurs & Nicholson.	2	3,000
Etna,	A. Bradley,	4 Wood Street	1846	A. & C. Bradley	1	2,000
Fort Pitt,	Knap, Wade & Co.	Etna and O'Hara Streets.	1814	Joseph M'Clurg	4	9,000
Franklin,	Marshall & M'Geary,	230 Liberty Street	1837	Rowan, Edgar & Bradley.	2	4,000
Fulton,	Pennock & Hart,	141 Wood Street	1855	Pennock & Hart	3	4,500
Iowa,	John C. Parry,	Second Street near Ross...	1839	Parry, Scott & Co.	3	2,000
Keystone,	D. De Haven,	Diamond, Allegheny	.....	Eichbaum, M'Henry & Co.	2	1,500
Lafayette,	Henry Anshutz,	Ohio Street, Allegheny....	1844	Henry Anshutz	1	1,000
Monongahela,	John Anderson & Co.	150 Water Street	1835	John Anderson	2	2,000
National,	D. M'Cardy,	280 Liberty Street.	1846	Quinn, M'Bride & Co.	1	1,000
Ninth Ward,	William Smith & Co.	Carrol & Mulberry Street.	1853	William Smith & Co.	2	3,000
Pittsburgh,	Bollman & Garrison,	119 Smithfield Street	1804	Joseph M'Clurg	2	2,500
Union,	Mitchell, Herron & Co.	194 Liberty Street	1829	Thomas Mitchell	2	4,000
Western,	Graff & Co.	124 Wood Street	1850	Moulder's Union	1	2,500
———,	S. S. Fowler & Co.	39 Water Street	1848	S. S. Fowler & Co.	1	1,800
16 Foundries.					30	44,300

These sixteen Foundries consume

		Value.
19,200	tons Pig Iron,	$576,000
540,500	bushels Coke and Coal,	27,025
81,000	Fire Brick,	1,620
79,500	bushels Fire Clay,	11,720
1,266	barrels Blacking,	3,798
1,575	gallons Oil,	1,732
Lumber to amount of		7,000
Iron and Nails, "		14,500
Hardware, "		2,325
Sand, "		2,320
Loam, "		2,700
		$650,740
They employ 860 hands, whose yearly wages are,		346,500
" keep twenty steam engines running, and the capital in the grounds, buildings and machinery, is		498,000
They produce 16,890 tons of castings of the various descriptions, before enumerated, worth		1,248,300

In these foundries may be daily seen cast, articles ranging from the heavy Columbiad, (cannon,) weighing 15,300 pounds, throwing a ball of 124 pounds, to the finest Berlin work of articles not larger than a finger.

In addition to the above, there is a

CANNON FOUNDRY,

Established by Joseph M'Clurg, in 1814—now carried on by Knap, Wade & Co.

The first cannon made were cast in the old Pittsburgh Foundry, at the corner of Fifth and Smithfield streets, on the ground now occupied by the Custom House and Post Office. They were bored and finished in works erected for the purpose, at the corner of O'Hara and Ætna streets, which made the beginning of the present Fort Pitt Iron Works, where the manufacture of cannon has been continued ever since. At the commencement of the works, and for some years afterwards, the boring machinery was driven by horse-power; for at that period there were only three or four steam engines in operation in the city or neighborhood.

The first contracts for casting cannon at this foundry, were made for supplying the fleet on Lake Erie, and for the defence of New Orleans, during the war of 1812. A large number of cannon

have since been made at the works, of all sizes, weighing from 800 to 15,300 pounds each; about 1,500 in all up to this time.

There is consumed by the foundry,

	Value.
600 tons of Pig Iron,	$18,000
15,000 bushels of Coal,	600
4,000 Fire Brick,	80
200 gallons of Oil,	250
20,000 feet of Lumber,	300
3,000 bushels of Sand and Loam,	180
100 " " Fire Clay,	16
Hardware and Files to amount of	100
	$19,526
There are employed in this Foundry, twenty-eight hands, whose wages will amount to	12,040
The value of the work, is	40,000
The capital in land, buildings and machinery, used in the business, is	41,000

MACHINE SHOPS

Are third in rank in the consumption of metal in the iron business of Pittsburgh. In the product of these is comprised the steam engine. The value of the steam engine to the world, no one has attempted to estimate. The value of the invention of the rolling mill, has from the nature of its products been computed, so far as the iron products of Great Britain are concerned, and could from the same data be calculated for every iron producing country; but the labors of the steam engine are employed in so multiform a way, that no sufficient data can be gathered to base a calculation upon. Some years ago, M. Michael Chevalier estimated that the steam engine had already furnished the world with a moving power of more than 10,000,000 horses or 60,000,000 of men. Steam has become the universal agent. We find it in the machine shop, in the factory, on the rail road and canal, on the ocean and the rivers. By it distances are effaced and the powers of man centuplicated. It more firmly unites together every people—causes men to know each other better, and softens and effaces national characteristics. In a country like the United States, with a long line of sea coast upon two oceans, intersected by rivers, containing immense inland seas, it is not possible to assign limits to its use. In the application of the steam engine to the purpose of manufacturing, it is a difficult task to give an expression of the extent it may reach even

in Pittsburgh, where the supply of iron and of coal at this point—both necessary to its production, and both demanding its labor—give compounding values, to all its uses.

In 1775, steam engines were first applied to the pumping of mines and the manufacture of iron; and in 1794, nineteen years after, the steam engine was assisting at Pittsburgh to build up that system of manufactures which has given her so wide a reputation. With the building of the steamboat, the construction of steam engines was successfully instituted in this city.

The following table shows to a certain extent, the increase of engine and manufacturing shops here from 1808 to 1837:

1808,	There	was	one Machinist and Whitesmith.
1813,	"	were	two Steam Engine Works.
"	"	was	one Wool Carding Machine Factory.
"	"	"	one Cloth Steam " "
1825,	"	were	six Steam Engine " Factories.
1829,	"	"	seven " " " "
1830,	"	"	100 Steam Engines built.
1837,	"	"	10 Steam Engine Factories.

The sources from whence to gather figures showing the progress of this branch of business are sparse; and in the absence of any information which will show satisfactorily the values of the steam engine and machine business at the various dates given above, we proceed to the business of the present day.

There are now in operation here, sixteen Steam Engine and Machine shops, as shown in the table upon the opposite page.

TABLE showing the STEAM ENGINE AND MACHINE SHOPS in Pittsburgh, in 1857.

Style of Works.	Name of Firm.	Location.	When Established.	By whom Established.	Cupolas.	Yearly Capacity in tons.
Duquesne,.....	James Rees,.....	Cor. Hay and Duquesne Way....	1840,	R. Wightman,.....	1	1,000
Fort Pitt,.....	Knap, Wade, & Co.....	Cor. Ætna and O'Hara.....	1814,	Joseph M'Clurg.....		
Fabers,.....	F. & W. M. Faber,.....	Cor. Elm and Faber.....	1834,	E. & F. Faber.....	2	1,500
Oscillating,.....	Cridge, Wadsworth & Co.....	Cor. East Lane & River, Alleg'y.	1855,	Cridge, Wadsworth & Co.		
Penn,.....	H. Wightman,.....	Lacock, near Federal, "	1844,	H. Wightman.....	1	1,500
Union,.....	A. Irwin & Co.....	Cor. Second, Short and Third....	1820,	Arthurs & Benny.....	2	2,400
Vulcan,.....	J. Tomlinson,.....	Duquesne Way and Cecil's alley.	1841,	J. Tomlinson.....	2	2,100
Washington,.....	Robinson, Minis & Miller,...	No. 21 Market.....	1836,	.....	2	4,990
West Point,.....	C. Preston,.....	Cor. Penn and Duquesne.....	1848,	.....	1	900
	W. P. Eichbaum,.....	Cor. Water & Middle ay, Alleg'y.	1840,			
	Graham, Bole & Co.....	Liberty, near Chesnut, "	1856,	Graham, Bole & Co.....	1	500
	S. S. Fowler & Co.....	No. 39 Water.....	1848,	S. S. Fowler & Co.....	1	1,800
	Haigh, Hartupee & Co.....	Cor. First and Short.....	1847,	White, Hartupee & Co.....	2	2,500
	Robert Lea,.....	Cor. First and Ferry.....	.....	.....	1	1,500
	Ramsey & Renton,.....	Short street.....	1847,	R. Ramsey & Co.....		
	John B. Warden & Son,.....	Cor. First and Redoubt alley.....	1830,	Columbia S. Engine Co....	2	2,000

These 16 machine shops have attached to them 12 foundries, in addition to those considered under the head of foundries, and have in the buildings, machinery and grounds used in the business, capital to amount of.....$287,000

There are employed in the sixteen machine shops,
737 hands, whose average wages amount to.....$306,802
They consume 8,800 tons pig iron, worth..... 264,000
" " 360,000 bushels coal, " 17,015
" " lumber to amount of..... 3,905
" " nails to amount of..... 500
" " bar and other iron to amount of..... 88,800
" " forge work to amount of..... 63,000
" " steel to amount of..... 4,060
" " hardware, to amount of..... 4,600
" " copper, " " " 6,000

They consume brass castings to amount of.....$ 26,200
" " oil, " " 5,538
" " sand, " " 1,300
" " blacking, " " 2,475
" " flour, " " 820
" " fire brick and clay, to amount of..... 3,000

$798,035

They keep 16 steam engines running, and produce
339 steam engines, valued at.....$508,000
other machinery to value of..... 328,300–$836,300

In addition to those mentioned, there is one other manufactory of steam engines which declined giving the figures of their business.

There is also the "machine tool" factory of Joseph F. Hamilton & Co., corner of First and Liberty streets, established in 1850. The manufacture of what is usually termed "machine tools," is only carried on in this one establishment in the city, that being the legitimate business of the firm, although steam engines are occasionally turned out.

The quality of tools made is not surpassed in design or capacity for work by any in the United States; an instance of this is to be seen in the work-shops of the Pittsburgh, Ft. Wayne and Chicago Rail Road, where a machine from this house, costing but $800, has turned 120 car wheels a day when in operation, and axles in proportion, for the last three years; while at the work-shop of another road a machine from the leading machine tool house in the United States will only turn forty wheels a day, and is incapable of turning axles.

This house employs twenty hands, whose wages are $9,360 a year; the products of the house are about $15,000.

The quality of work turned out by the machine shops of Pittsburgh is too well known to need praise. The engines gotten up for the famous Pittsburgh and Cincinnati line of Packets were evidence of the beauty and staunchness of the work and the skill of the workmen. In fact there is hardly a boat that leaves the wharf that does not carry in her motive power the best panegyric of the steam engine builders of Pittsburgh.

BOILER YARDS

Are the natural accompaniment of our machine shops; of these there are in the city the following:

Style.	Firm.	Location.	Year established.	By whom.
Duquesne,	Jas. Blair & Co.	Cor. Duquesne and Duquesne Way,	1846,	M'Collister & Co.
	Barnhill & Co.	61 Penn,	1852,	Barnhill & Co.
	M. E. Busha & Co.,	Cor. Liberty & Water,	1849,	B. & Douglass.
	Douglass & English,	First, near Ferry.		
	Knap, Wade & Co.	Cor. Ætna & O'Hara,	1830,	M'Clurg & Pratt.
	Robinson, Minis & Miller,	South Pittsburgh.		
Point,	J. Wightman,	Water, below Liberty,	1836,	J. Wightman.

These employ 1,049 hands, whose yearly wages are	$ 75,980
They consume 1,470 tons boiler and sheet iron,	177,870
" " — 72,000 bushels coal,	3,500
" " Bar iron, rivets and castings, to amount of	10,800
	$268,150

They keep 7 engines running, and produce

595 Boilers, worth	$265,000	
Sheet iron and bridge work,	40,000	
		$305,000
The capital in grounds, buildings and machinery necessary to the business, is		$183,000

There are manufactured in Pittsburgh in addition to the usual style, boilers of two different patents, owned here. One is "Barnhill's," built upon the plan of a locomotive, with a fire box, thereby saving room. This boiler runs an engine of 30 horse power all day, with the consumption of 10 bushels of coal. Steam can be got up quicker in it than in the old flued boilers, and from its having no brick work it can be easily put up and moved. The other is "Wightman's," the peculiarity of which is, that from its compactness, it occupies but half the room of the old style boilers and consumes but one third the fuel.

SHOVELS AND AXES

Are among the important iron and steel manufactures of the city. Shovels of all descriptions are made here, and a very large trade has been built up. The same advantage of iron and coal, alluded to before, in connection with other products of our mechanics, have in this class of manufactures given Pittsburgh an impetus which has enabled her to rival successfully all other markets. Her shovels and her axes are necessaries to the completion of the stock of every dealer in hardware, in the West; and every season adds to the number of purchasers who order these articles from Pittsburgh, to the neglect of other points. There are four firms in this business, viz:

Style Works.	Firm.	Location.	Year Estab'd.	Who by.
Eagle,	J. Holmes & Co.,	13 Wood,	1840	J. Holmes.
Empire,	Newmyer & Graff,	22 Wood,	1854	Dawson, Newmyer & Co.
Lippincott,	Lippincott & Co.,	118 Water,	1847	Lippincott & Co.
	Postley, Nelson & Co.,	22 Market,	1843	Nelson & Morgan.

These four factories consume

	Value.
3,173 tons Bar and Sheet Iron, worth	$228,456
570 tons Steel, worth	141,250
394,000 bushels Coal and Coke, worth	19,700
770 Grind Stones, worth	19,250
34,000 Boxes, worth	5,100
31,400 doz. Shovel Handles, worth	23,550
Borax to amount of	3,000
They employ 495 hands, whose yearly wages are	231,660
	$671,066

They keep five steam engines running, and produce

44,000 doz. Axes a year, worth	$462,000
32,000 doz. Shovels, worth	208,000
13,590 doz. Picks and Mattocks, worth	94,242
11,000 doz. Planter's Hoes, worth	33,000
2,500 Vices, worth	16,500
Saws to amount of	10,000
	$823,742

The production of these four factories, it will be observed, is not confined to shovels and axes; beside these, three of them, Lippincott & Co., Newmyer & Graff, and Postley, Nelson & Co. manufacture picks and mattocks; Lippincott & Co. also manufacture saws; Newmyer & Graff, planter's hoes; and Postley, Nelson & Co., vices; Holmes & Co. confine their business chiefly to broad axes and hatchets.

The capital in the ground, buildings and machinery in use in the prosecution of this business is $154,400.

Of the early history of this branch of business there is not sufficient trace to institute a comparison.

In 1803 the production of axes and hoes is mentioned in connection with other articles. In 1810 the making of hatchets, shovels, and axes, is noticed in the valuation of ironmongery made in that year in Pittsburgh. The value of the whole amount of ironmongery is set down at $15,000, of which the value of the hatchets, shovels, and axes, would, from the connection in which they are mentioned, not exceed $2,000. In 1813 there was one steam works for making shovels, spades, &c.

In 1836 Messrs. Lippincott & Brothers, and Kings, Higby & Anderson, manufactured 8,000 doz. shovels and spades, 1,600 doz. hoes, and 600 doz. saws. Oren Waters, on Chartiers creek, and Ephraim Estep, at Lawrenceville, the same year, made axes, shovels, spades, &c., to amount of $90,000.

FORGES.

Of these for the forging of heavy shafts and every variety of like work, there are two: The "Pennsylvania," Everson, Preston & Co., and "The West Point," D. Fawcet & Co.

These consume 1,950 tons Bar Iron, 220,000 bushels Coal, 37,000 Fire Brick, 354 tons Clay, 760 gallons Oil, which amount to	$156,462
They employ fifty-seven men, whose wages amount to	29,600
" produce work to the value of	224,500
" run two steam engines.	

RIVER BLACKSMITHS AND CHAIN MAKERS.

The heavy amount of steamboat building carried on at this point, has created a class of blacksmiths whose principal and peculiar business is the "ironing" of boats, as it is known. Of these there are seven, viz:

Firm.	Established.	By whom.	Location.
Joseph Long,	1811,	Joseph Long,	Cor. Short and Water.
John Wilkinson,	1841,	John Wilkinson,	447 Liberty.
James Kennedy,	1843,	Kennedy & Gracey,	Cor. West and Water.
Wm. B. Scaife,	1848,	Wm. B. Scaife,	First, near Wood.
Gracey, McKee & Co.,	1850,	Gracey, McKee & Co.,	33 and 34 Water.
Douglass & English,	———	Douglass & English,	First, near Ferry.
Lycet & Robison,	———	Lycet & Robison,	Second street Road.

These consume 985 tons of Bar Iron,	$29,500
" " 67,600 bushels of Coal,	3,380
" " steel to amount of	350
They employ forty-eight hands, whose wages are yearly	18,100
" produce work in their line of business to amount of	61,200

These firms employ three steam engines.

There are in the city and environs, 100 blacksmiths who do a general jobbing business in all descriptions of work usually done by blacksmiths, the aggregate amount of whose work is about $200,000 per annum.

PATENT HOT-PRESSED NUTS.

As the manufacture of these articles originated in Pittsburgh, a short history of them will not be out of place in this work.

In 1845 or 1846, William Kenyon, of Steubenville, Ohio, invented a machine for cutting and pressing a nut at one operation; the right of which invention was purchased by Haigh, Hartupee & Co. from him in 1850, who then applied as his assignees for a patent, which was granted shortly after. Some period after the time mentioned as the date of Kenyon's invention, Isaac H. Steer constructed dies for a similar purpose.

In the spring of 1850, the first machine for that purpose was built by Henry Carter and James Rees. Henry Carter has purchased the right of Isaac H. Steer, and obtained letters patent, both in the invention of Steer and Carter & Rees.

The manufacture of this article has since its inception been prosecuted with success, and the demand has steadily increased. In April, 1856, James Rees disposed of his interest in the manu-

facture to Henry Carter, who at the same time formed a co-partnership with Charles Knap, of the Fort Pitt Works in this city, under the style of Knap & Carter, Charles Knap having purchased one-half of the patent for the territory west of the Allegheny mountains. On the 1st of January, 1857, they associated with them John W. Butler of this city, a gentleman long and favorably known to the business community—the style of the firm now being Knap, Carter & Co.

Messrs. Haigh, Hartupee & Co., the producers of this article under Kenyon's patent, have been manufacturing hot-pressed nuts since 1851, and with a steady increase in their orders to the present time. They contemplate the present season enlarging the capacity and production of their works.

Both firms are making arrangements to manufacture bolts of all sizes extensively. Their capacity at the present time (April, 1857,) is shown by the following table:

Firm.	Location.	Established.	Who by.	Mach.	H.Fur
Haigh, Hartupee & Co.	Cor. First and Short,	1851,	Haigh, Hartupee & Co.	4	2
Knap, Carter & Co.	Cor. Market & Water,	1850,	Carter & Rees,	8	3

They employ two steam engines.

" " fifty-two hands, whose yearly wages are.....$ 19,344

" produce 1,700 tons Nuts, Washers, &c., worth..... 229,700

The steady increase in the demand for the articles of this branch of manufactures, is the best evidence of their quality, and the intimation given above of the intention of both firms to enlarge is satisfactory as to the vitality and the prosperity of this portion of the business of Pittsburgh.

RAIL ROAD SPIKE MANUFACTORY.

This important manufactory was started in 1852, by the present proprietors, PORTER, ROLFE & SWETT, at the corner of Mechanic and Pike streets, in the Fifth Ward, where they still carry on the business. It is the only establishment of the kind of any extent in the West, and the only one in Pittsburgh. The rail road spikes are manufactured by "Swett's Rail Road Spike Machine," the patent of which for the United States is owned by the firm.

The peculiarity of the spikes made by this machine is, that they are larger under the head where the greatest strength is required, and have a sharp chisel point, therein differing from the article made by other machines. The establishment is running three

machines of Swett's patent, and have in the last year turned out 3,000 tons of spikes worth $250,000.

They employ twenty hands, whose yearly wages are.....$9,360
Buildings and lot used in the manufacture are worth about..... 5,000
The machines are worth.....15,000
and an average day's work of a machine is 5 tons.
They keep one engine running.

IRON RAILING, SCREW AND MACHINE MANUFACTURERS.

The manufacturing of iron railing, housen, tobacco, timber, mill, cider press, and fuller's screws, and the construction of various kinds of machinery, is carried on by the subjoined firms. The advantages of construction of every description of iron work in Pittsburgh have been dwelt upon in various portions of this volume, rendering it but reiteration to mention here any of the advantages possessed by the firms engaged in the business, to compete with and successfully rival manufactures of the same class at other points.

Firm.	Location.	Established.	Who by.
Marshall & Bro.,	No. 71 Diamond alley,	1818,	John Marshall, Sr.
Andrew Emme,	Neville & Carson, Birmingham,	1852,	Andrew Emme.
Cochran & Bro.,	No. — Second street,	1843,	Jas. Cochran.

These employ fifty-four men, whose yearly wages are.....$15,460
They consume Bar Iron to amount of.....$14,000
" " Iron Castings " 6,120
" " Brass " " 400
" " 19,500 bushels of Coal,..... 975
" " Steel to amount of..... 1,250
" " 240 gallons of Oil,..... 280
23,025

Total,.....$38,485

The capital absorbed by the buildings, grounds and machinery necessary to the prosecution of the business, is.....31,000
They have three steam engines running, and produce work yearly to amount of..... 52,000

SAFE MANUFACTORIES

Occupy a prominent position among the manufactories of the city—not so much from their number, as from the wide demand which has arisen for their productions. The safes built by Pittsburgh houses have been repeatedly subjected to severe trials, both intentionally and accidentally, and with the most satisfactory results. In every case where tried, proving that to their protection could be safely confided by the business man the accounts and the papers of his business, not

only for preservation from fire, but also from the burglar. In point of workmanship in all the details of construction, they rival successfully the best Eastern manufactories; and the increasing demand for them is indicative that in price, as well as workmanship and security, they are entirely satisfactory to the business community.

There are engaged in the business the following firms:

Firm.	Location.	By whom.	Established.
Burke & Barnes	129 & 131 Third st	Constable, Burke & Co	1840
Lippincott & Barr,	157 First st	J. S. Strickler & Co	1846
W. T. M'Clurg,	10 Wood st	W. T. M'Clurg,	1852

These manufacturers employ

Sixty-five hands, whose wages yearly amount to $28,600

They consume

Bar and Sheet Iron to amount of		$29,500
Iron castings, " "		15,500
Locks, " "		9,600
Brass castings, " "		600
Steel, " "		2,400
Lumber, " "		1,600
Coal, " "		500
		$59,700

They produce

1,600	Safes, worth	$96,000
100	Vault Doors,	10,000
60	Burglar-proof Boxes,	10,000
		$116,000

CUTLERY AND SURGICAL INSTRUMENTS

Are manufactured to a considerable extent in Pittsburgh, by the following firms:

Firm.	Location.	Established.	Who by.
Bown & Tetley,	136 Wood street,	1848,	Bown & Tetley.
John Cartwright,	86 " "	1839,	John Cartwright.
E. Klemm,	147 Penn "	1852,	E. Klemm.

They employ twenty-nine men, whose yearly wages amount to $12,080

They consume 4½ tons Steel,		$1,050
" " 21 " Bar iron,		1,260
" " 25 Grind Stones,		625
" " 9,000 bushels Coal,		450
" " Hardware, to amount of		1,400
" " 200 gallons of Oil,		250
" " Woods and Ivory, to amount of		500
		$5,535

They keep three engines running, and produce articles in their line of business to amount of $30,000

In the productions of these firms are all varieties of cutlery of the finest grades, and all descriptions of surgical instruments, of excellent quality. The workmanship of the articles is not surpassed by those of foreign importation, or by those made in the manufactories of other cities. This branch of trade is yet in its infancy here.

SMUT MACHINES and SEPARATORS

Are also manufactured largely here by two firms. One only, furnished the figures of their business. JACOB BERNER, Lacock street, near Cory, Allegheny, established the business in 1854; he employs three hands, and produces smut machines to the yearly value of $20,000.

FILE MANUFACTURING

Is carried on by J. ENGLAND, No. 263 Liberty street. He established himself in this business in this city in 1841, and now employs

Fifteen hands, whose yearly wages amount to	$ 6,240
His business consumes Steel to amount of	2,600
Total,	$ 8,840
He produces Files to amount of nearly	$12,000

SPIKES and BOILER RIVETS

Are, in addition to the quantities turned out by the nail factories attached to the rolling mills, manufactured by S. SEVERANCE, No. 50 Water street, who makes the production of those articles his peculiar business. The establishment originated in 1840 with L. Severance, and now employs one steam engine, running four spike machines, with a capacity of 12,000 kegs a year. This factory employs ten hands and turns out 5,000 kegs of spikes and rivets a year, worth $50,000; the machinery is valued at $10,000.

THE GLOBE SICKLE FACTORY,

THOS. W. SHAW, Pine Creek, Manufacturer;
COOPER & LAVELY, No. 58 Wood street, sole Agents,

Is another of the many manufactories of Pittsburgh which consume iron and steel.

This establishment is of over twenty-five years standing and is as well known in New York, Philadelphia and Baltimore, through its productions, as it is at home, and is equally well introduced in the various sections of the Union by the same means, particularly throughout the West. The sickle from this manufactory is admitted to be superior to any article either imported or of American manufacture, in the market.

The quantity produced and sold per annum varies from 2,500 to 3,000 dozens, which is probably about three times the entire product of all the other manufactories of the article in the United States.

SADDLERY HARDWARE.

The manufacture of this article of trade is carried on by the following firms:

Olnhausen, Crawford & Co. 157 Wood St., 1849, 1 Cupola and 1 Heating Furnace.
Cornwell & Kerr, No. 3 St. Clair, 1850.

They employ 85 hands, whose wages amount to.....$22,800

They run 1 engine, and consume

200	tons of Pig Metal, worth	$6,000	
79	" " Bar Iron, "	4,354	
260,000	bushels of Coal and Coke, worth	1,300	
3,350	bushels of Charcoal, "	335	
1,700	oz. pure Silver for plating, "	2,581	
1,200	lbs. Brass, " " "	720	
60,000	Fire Brick, "	900	
2,000	bushels Fire Clay. "	32	
			$15,402

They produce

4,000	pair silver plated Hames, worth	$6,000	
2,000	doz. Bridle Bits, "	8,000	
2,000	" Brass Stirrups, "	8,000	
1,500	" Iron Japanned Stirrups,"	2,250	
	Lightning Rods, worth	6,000	
	Japanned goods, and Malleable castings, worth	10,000	
	Silver plating to amount of	4,000	
			$44,000

The capital absorbed by buildings, machinery, and ground necessary for the carrying on of the business is $10,400.

Another very important manufactory of Pittsburgh is the

JUNIATA RIVET MILL.

W. P. Townsend, 19 Market Street—established 1849.

It is the only manufactory of the kind in Pittsburgh exclusively devoted to the production of Rivets, and is also the only one of its kind in the West. The establishment makes all sizes of iron and tinned rivets, suitable for every description of sheet iron and tin plate work, from 8 ounce to $\frac{3}{8}$ inch in diameter. The rivets are all made of the choicest Juniata iron.

The establishment turns out about 150 tons of rivets per annum, valued at $20,000, employing eight hands. The capital in machinery, &c. is about $10,000.

The fact that this manufactory fills heavy orders for eastern houses,

is conclusive as to the quality of the article made, and of its ability to successfully compete with eastern producers of the same goods.

R. TOWNSEND & Co's. WIRE FACTORY,

No. 19 Market Street,—established 1827.

Is the only factory of the kind in the city. The wire manufactured is from No. 1 to 36, and made of the first quality Juniata iron.

The establishment employs fifteen hands, whose yearly wages are $7,020. There is made in it 300 tons of wire annually, valued at $40,000.

In the manufactories of Pittsburgh consuming iron and steel, must be included several for the production of arms.

In addition to the cannon foundry already described, there are two manufactories of

GUN BARRELS.

Firm.	Location.	Established.	Who by.
Noble & Little,	Cor. Allegh'y st. & Mulberry ay	1850,	J. & D. Little.
Postley, Nelson & Co.	No. 22 Market street,	1843,	Morgan & Nelson.

These employ thirty men, whose wages amount yearly to	$16,720.00
" consume Bar Iron to amount of	6,400.00
" " Steel " " "	250.00
" " 39,410 bushels Coal,	1,970.50
Total,	$25,340.50

They run two engines, and produce 16,500 Gun Barrels, worth...$28,875
The value of the ground, buildings and machinery employed in the business, is 5,500*

There is also one

RIFLE and GUN MANUFACTORY,

Bown & Tetley, No. 136 Wood Street—established 1848.

This establishment is the only one in the West which constructs rifles and guns for the trade, exclusively. It has been in operation in the present large scale about four years, and in that time this article of Pittsburgh manufactures has attained a reputation throughout the whole western country that is rapidly drawing off trade from eastern houses to this point. The quality of the rifles and guns manufactured by this establishment the nature of this volume does not require us to record, or really permit—it being the design of the book simply to show what is produced here, and to what extent. Their reputa-

* This is for one; the value of one establishment was included before in another branch of manufactures.

tion, as already cited, is conclusive as to their value, and as to the advantages of purchasing here.

This establishment employs twenty-five hands, whose yearly wages amount to $15,600, and turns out now at the rate of 4,000 rifles a year, with a steady increasing demand. Although rifles and guns have been made here for years in a limited or retail way, this is the first attempt to establish on a large scale the manufacture of this species of arms here, or in the West.

Its success so far is another evidence that Pittsburgh is unequaled, not only as a point at which to manufacture, but also whence to command the trade of the country lying west of the Allegheny mountains, in all articles she turns out from her workshops.

Another species of arms, and a new branch of Pittsburgh manufactures, is the

REPEATING PISTOL MANUFACTORY,

JOSIAH ELLS, PATENTEE AND MANUFACTURER.

This is the only manufactory west of the mountains. The business, owing to the time required to manufacture tools for the proper construction of the weapon, has as yet no statistics worth recording. The pistol is a valuable one, equal if not superior to any repeater now before the public. Of its superiority we may instance the fact that it can be discharged with the same certainty and precision as any other now made, and five times where others not self-cocking can be fired once.

Messrs. COOPER & LAVELY, No. 58 Wood street, are, by arrangement with Mr. Ells, actively engaged in introducing this arm to the public, and are sole agents for its sale.

The arrangements completing for the production of this article are such, that in a short time it will be ranked among the principal Pittsburgh manufactures.

The making of what is termed

DOMESTIC HARDWARE

Is carried on in two establishments on an extensive scale. In this branch is included the manufacture of stock and ore, depot, dormant, pig metal, portable, platform and counter scales; paint, "kaughphy' and corn mills; copying presses; locks, of twenty different descriptions; a great variety of latches, bedstead castors and fasteners, weights, bell-pulls, sauce pan handles, wardrobe hooks, hinges, bolts, stands for fire and sad irons, umbrella stands, tobacco cutters, locking hasps,

screw wrenches, and in fact every description of malleable castings and domestic hardware.

The following are the firms:

	Cupolas.	Capacity in tons.
Novelty Works, Livingston, Copeland & Co., cor. First & Grant, established 1833, by L. R. Livingston,	4	3,500
Variety Works, Jones, Wallingford & Co., cor. Grant and Water, established 1849, by Edwards, Morris & Co.	2	3,000

These two establishments employ 500 hands, whose yearly wages amount to	$156,000
They consume 2,200 tons of Metal yearly,	66,000
" " 25 " Copper, Zinc and Lead,	10,000
" " 3,000 kegs of Nails, "	1,200
" " 42,000 bushels of Coal and Coke,	2,000
" " Lumber, to amount of	7,500
" " Bar and Sheet Iron, to amount of	3,000
" " Knobs, Screws and Japan, " "	31,500
" " Sand, Fire Brick and Clay, " "	2,500
Total,	$279,700
They keep two engines running, and produce manufactures to the value of	$450,000

PLOW MANUFACTORIES.

Of these there are three, as given in the subjoined table. The plows from these establishments are to be found in all portions of the West. Large quantities are shipped to the South, and in fact to every section of the country lying west of the Allegheny mountains; and also in considerable quantities to the East.

				Cupolas.	Capacity in tons.
Globe,	Hall & Speer, 166 Penn st.,	established	1829, by Sam'l Hall,	2	2,400
Hall's,	R. Hall & Co., 145 Liberty,	"	1846, " R. Hall,	1	2,000
Valley Forge,	J. A. Speer, 139 "	"	1854, " Hall & Speer,	1	900

These works employ 120 hands, whose yearly wages amount to	$ 71,760
They consume 1,375 tons of Pig Metal and Scrap Iron, worth	41,250
" " Bar and Sheet Iron, to amount of	18,500
" " Lumber, " " "	5,000
" " Paint and sundries, " " "	10,000
" " 100,000 bushels of Coal,	5,000
Total,	$151,510
They make 32,000 plows, which with other articles, such as cultivators, &c., are worth	$192,000
There are three engines kept running.	
The buildings, lot and machinery necessary to the business is of the value of	$44,500

The agriculturists of Florida and Texas are among the customers of these factories; and one of the firms is making arrangements to introduce their plows extensively into Cuba.

FRANCIS' METALLIC LIFE BOATS

Are also numbered among the manufactures of Pittsburgh. They are constructed by Wm. B. Scaife, First, near Wood street, who is the only agent for the western country. These boats are famous, as well for their actual qualities, which have made them not only one of the most efficient of life preservers in marine disasters, and the most economical boat for service; but also from two of them having been used by Lieut. Lynch, in his expedition to the Dead Sea.

A pamphlet of 124 pages, published by the corporation for their manufacture, gives many thrilling accounts of their efficiency in saving life, and weighty statements of their durability and service.

Mr. Scaife employs in their manufacture ten hands, whose wages amount to $3,900, consumes ten tons of galvanized iron, and produces 100 boats a year, worth $10,000.

CHAPTER XVII.

COPPER.

Pittsburgh being largely interested in the copper business in all its branches, and the Pittsburgh management of copper mining having been peculiarly successful, a separate chapter is devoted to this metal, as eminently a Pittsburgh staple. There are managed here the following mines, which are now in successful operation, to a greater or less degree: Cliff, North American, National, Adventure, Ridge, Mass, Aztec and Central. The attention is first naturally drawn to the

PITTSBURGH COPPER SMELTING WORKS,

From the location of this establishment here. In connection with it some mention of the celebrated "Cliff Mine" is made.

These works are situated on the Monongahela river, a short distance from the first dam, in the suburbs of Pittsburgh, and were erected in 1848 for the purpose of converting into ingot and cake copper the minerals of the Pittsburgh and Boston Mining Company, produced at its mines on Lake Superior.

From the several annual reports and other publications of this Company, we are able to gather the following particulars in regard to the organization, and the character and extent of its operations.

It appears that the concern was originally projected in 1844, by a few of our leading business men, as a private enterprise; amongst whom we find the names of Charle Avery, Curtis G. Hussey, Thomas M. Howe, and William Pettit, who associated with them other parties residing here and in Boston.

In the spring of 1845 they organized a joint stock association, which was subsequently incorporated by the Legislature of Michigan, under the name of the Pittsburgh and Boston Mining Company.

The three first named gentlemen, with whom we find associated at a later period, Thomas Bakewell, Esq., and at a still later date, James M. Cooper, Esq., have continued in active management of the enterprise from the day of its inception to the present time; and we do not think it is too much to say, that to their untiring perseverance and enlarged business experience the country is much indebted for the successful development of the mineral treasures of the Upper Peninsula of Michigan; and that they have a well grounded claim to be regarded as the pioneers of a most important mining enterprise, prosecuted amidst a variety of discouraging vicissitudes, in a wilderness country theretofore wholly unexplored, and which but the year before the date of the commencement of their operations was reclaimed from the dominion of its aboriginal possessors.

The capital stock of this Company is $150,000, divided into 6,000 shares of $25 each; of which $111,000 only has been called in, or what is equal to $18.50 per share: and yet, such has been the success attending the operations of the Company, that we notice the market value of its shares quoted in Boston at $250.

The famous Cliff Mine is the property of this Company. It is situated on Keweenaw Point, on the southern shore of Lake Superior, in the county of Houghton, in the State of Michigan, and is justly regarded as one of the most important copper mines in the world. History furnishes no account of any other rivaling it in richness, unless the no less wonderful Minnesota Mine of the Ontonagon district may claim to occupy that position.

From the Report of the Directors for the year 1855 we learn that the product of the mine in rough copper, or what is improperly termed *mineral*, for that year was 2,995,837 lbs., or $1484\frac{1199}{2000}$ tons; and that the same produced when converted into refined copper at the furnaces at Pittsburgh, 1,874,197 lbs., or $937\frac{197}{2000}$ tons, from which the Com-

pany realized, after paying the cost of smelting and refining, the sum of $475,911.25.

We learn from the same source that the receipts of the Company from the sale of copper, for the whole period of its operation, amounts to the sum of $2,120,101.10; and that the expenditures during the same period, which were mainly for labor and supplies, amounted to the sum of $1,405,719.58. The number of miners in the service of the Company is two hundred and nineteen, their average monthly wages being $37.37. The number of men employed in other capacities is two hundred and twenty-six. Their average monthly earnings are $30.07.

The amount of dividends paid to stockholders to the close of the year 1855 amounted to $720,000, and we learn that $180,000 additional will be paid from the earnings of 1856, making the aggregate dividend equal to $150 per share, or about eight hundred per cent. upon the capital paid in.

The present Officers of the Company are:

Charles Avery, President.

Curtis G. Hussey, Pittsburgh,
Thos. M. Howe, "
Jas. M. Cooper, "
J. W. Clark, Boston,
Edw. Jennings, Michigan,
} Directors.

Thos. M. Howe, Secretary and Treasurer.

The National Copper Mine Company has been in existence about three and a half years, during which time the shipments of rough copper, or mineral, amounts to 518,132 lbs., the net yield of which, in refined copper, was 385,950 pounds, from which was realized about $92,000. The capital stock of the Company is $300,000—divided into 10,000 shares of $30 each, upon which $11 per share, or $110,000, has been paid in. Upon that amount this Company has gotten itself into so good a position that the proceeds arising from its product of copper will obviate the necessity of further calls of assessments upon the stock.

The prospective results of this mine are such that the shares are now at $50 each. The product of last year is nearly double that of the preceding year, and netted 79½ per cent.

This mine joins the Minnesota Mine immediately on the west, and carries the same veins. The miners are now at work on the celebrated conglomerate lode. An important controversy is pending between this and the Minnesota Company, which has been twice decided by

the United States Court in favor of the National. The suit is for the possession of 80 rods of mineral ground immediately between the two mines, the possession of which is only withheld from the National by the law's delay. The average number of hands employed by this Company is eighty. The President of the Company is Charles Avery, and the Secretary and Treasurer, James M. Cooper.

The Adventure Mining Company has been in operation some ten years, and with but partial success, until within the last two years; in which time the Directory, which is nearly the same as that of the "Cliff" and National Companies, adopted the tribute system. This system is that upon which the principal mines of Cornwall are worked, being a per centage paid to miners on the amount of copper obtained. The first year of the experiment the result was the obtaining of 156,885 lbs. of mineral, yielding 62,253 lbs. pure copper, or 40½ per cent. The following year, 269,165 lbs. of mineral were produced, yielding about $36,000. The present product appears to be equal to twenty tons a month, with a very considerably reduced force, which will realize a small net profit to the mine. The capital stock is $200,000—divided into 10,000 shares, on which $8.50 each is paid in. C. G. Hussey is President of the Company, and James M. Cooper, Secretary and Treasurer.

The Ridge Mining Company, (Wm. Bagaley, President; Joshua Hanna, Secretary and Treasurer,) commenced operations in 1850. The capital stock is $200,000—divided into 10,000 shares, on which $18.65 each has been paid. In this mine there has been a steady improvement as it attains depth. In 1856 there were taken out from it 124,000 lbs. of mineral, and from present indications there will be a large increase over that amount this year.

The North American Mining Company, (Thos. Bakewell, President; Waterman Palmer, Secretary and Treasurer,) commenced operations on its second mine in 1852. They raised, in the year 1856, 728,000 lbs. of mineral, which produced 482,000 lbs. of pure copper, worth $120,500. This mine has not called any assessments for two years. The mine in 1856 paid from its product of copper all its expenses, and had a surplus of $11,000. The prospect of the yield for 1857 is, that it will reach from 450 to 500 tons of mineral.

The Central Mining Company, (C. G. Hussey, President; Waterman Palmer, Secretary and Treasurer,) is a new mine, which commenced operations in 1854. The capital stock is $500,000—divided into 20,000 shares of $25 each. On these only 85 cts. per share has been

assessed—the product of the mine, with this small per centage upon the stock, paying all expenses thus far.

The Aztec Mining Company, (C. G. Hussey, President; and N. Veeder, Secretary and Treasurer,) has been in operation six years. There was raised during the first ten months of 1856, 106,370 lbs. of mineral, which produced 45,828 lbs. of pure copper, worth $11,099.39.

There is one

COPPER ROLLING MILL

In the suburbs, for the manufacture of brazier's and bolt copper, which works exclusively the product of the Lake Superior Mines, and we understand makes a very superior article—one generally preferred, when great tenacity is required, to that which is made at the east of Chili, and South American pig copper.

The Lake Superior copper being entirely free from foreign deleterious matter, is much more ductile, and its tensile power is considerably greater than the copper of South America or Cuba, which is more or less alloyed with foreign substances. The Copper Rolling Mill to which we refer is that of Messrs. C. G. Hussey & Co., situated upon the east bank of the Monongahela river. The extent of their annual product, amount of capital, or number of hands employed, we are unable to state with anything like accuracy.

Another establishment of a similar character is in process of construction, and is expected to be in operation some time in the approaching summer or autumn.

COPPER AND TIN SMITHS.

There are in this city a large number of manufactories of tin and copper. The following are the principal firms:

Firm.	Location.	Established.	By whom.
Brown & Mills,	207 Liberty,	1835,	Thomas Brown.
L. O. Cameron,	213 "		
T. J. Craig & Co.,	134 Wood,	1836,	Barndollar & Moorhead.
J. H. Demmler,	180 Liberty,	1838,	J. H. Demmler.
M. Doerflinger,	61 Smithfield,	1845,	M. Doerflinger.
Fitzsimmons & Morrow,	8 Market,	1852,	M. Shirk.
John Gabby,	54 Wayne,	1855,	J. H. Gabby.
Howard & Rodgers,	139 First,	1825,	Howard & Rodgers.
James T. Kincaid,	107 "	1832,	L. & P. Peterson.
Kean & Keller,	112 "	1842,	Kean & Keller.
J. H. Oliver,	61 Smithfield,	1837,	J. M'Williams.
Wm. B. Scaife,	First, near Wood,	1835,	Wm. B. Scaife.
John B. Sheriff,	9 Market,	1835,	John B. Sheriff.

These firms employ 116 hands, whose yearly wages are	$ 44,720
They consume 2,277 boxes Tin, worth	34,155
" " 133,000 lbs. Copper, "	33,250
" " Iron, Rivets, Wire, Zinc, &c., to value of	29,506
" " Coal and Charcoal, " " "	3,500
Total,	$145,131
They manufacture articles in their line to the value of	$175,966

Besides doing an amount of work in jobbing which cannot be given with accuracy.

Several of the above firms also deal in stoves, and other articles of a similar nature.

In addition to the foregoing firms, there are fifteen other manufacturing tinners, who make up for their own retail sales, and do but a limited amount of business; they use about 600 boxes of tin, worth when manufactured, $18,000.

CHAPTER XVIII.

COTTON AND WHITE LEAD.

Cotton cloths, cotton yarns, and batting, are among the more important branches of Pittsburgh manufactures. The first mention of this manufacture in Pittsburgh, we find in Cramer's Almanack for 1804, where in "a view of the manufacturing trade of Pittsburgh," is the following remark: "Carded and spun cotton by the carding machine and spinning jenny, $1,000." In 1806 the same publication notices, "one cotton manufactory which can spin 120 threads at a time." In 1808 the cotton factory is mentioned as producing cotton yarns, &c., "to the great credit and profit of its industrious proprietor." In 1810 there were two cotton mills, one "working 60 spindles, and the other contemplates working shortly 234 spindles." The value of their manufactures is set down at $20,000. In 1817 there were "two cotton spinners," as they are called in the report of the committee of Councils, who employed 36 hands, and manufactured cotton to amount of $25,518. In 1837 there were six cotton factories, using 6,200 bales of cotton, runing 21,800 spindles, employing 900 hands, and turning out cotton goods to value of $770,000, the details of which factories may be seen on page 89.

In 1857 there are the following:

COTTON FACTORIES.

Mill.	Firm.	Location of Office.	Established.	Who by.
Anchor,	Thos. Arbuckle & Co.	Robinson and Bank Lane, Allegheny,	1828.	Blackstock, Bell & Co.
Banner,	Park, Painter & Co,	120 2d st. Pittsb'g	1850.	Park, Painter & Co.
Eagle,	King, Pennock & Co.	29 Wood st., "	1832.	Arbuckle & Avery. [Co.
Hope,	I. M. Pennock & Co.	37 " " "	——.	Wrensball, M'Cormick &
Penn,	Kennedy, Childs & Co.	Bank Lane & Sandusky st. Alleg'y,	1846.	Kennedy, Childs & Co.

Mill.	Spindles.	Looms.	Cards.	Hands.
Anchor	5,412	161	50	200
Banner,	4,768	151	54	250
Eagle,	8,376	140	—	290
Hope,	8,110	—	—	290
Penn,	7,000	207	83	300
	33,666	659	187	1,330

These mills consume 13,600 bales of Cotton, worth		$816,000 00
" " " 299,000 bushels of Coal,	"	14,950 00
" " " 6,000 gallons Oil,	"	10,500 00
Incidental expenses, for Mill Findings, Starch, Taxes, Insurance		165,000 00
		$1,006,550 00
They produce 8,100,449 yards Sheetings, worth		$648,035 00
" " 2,870,000 lbs. Cotton Yarns,	"	574,000 00
" " 274,000 " Batting and Wicks,		35,626 00
" " 60,000 " Cotton Cordage,	"	12,000 00
		$1,269,655 00

It will be noticed that although there is a decrease of one in the number of the factories since 1837, yet there is an increase of over 50 per cent. in quantity of spindles, and the same ratio through the various totals given, and in some instances a greater per cent.

WHITE LEAD.

The manufacture of red lead is mentioned in 1810 as having been carried on in Pittsburgh, when in the list given by the census, there were enumerated three red lead factories, producing leads to value of $13,100. In 1813, there is noticed in Cramer's Almanack, "one white lead factory (Beelin's)." In 1817 the committee of Councils reported one white lead factory, employing six hands and producing leads to value of $40,000. In 1837, as will be seen by the table on page 90, there were eight lead factories, producing 74,496 kegs of leads, valued at $206,000. In 1857 there

are in the community of Pittsburgh but three white and red lead factories, yet their production is far beyond that of the eight factories of 1837.

Firm.	Location of Office.	Estab'd.	Who by.
B. A. Fahnestock & Co	No. 19 Wood st	1844	B. A. Fahnestock & Co.
T. H. Nevin,	No. 167 Liberty st	1843	T. H. Nevin & Co.
W. C. Stockton & Co	No. 24 Wood	1845	J. Schoonmaker.

These three works employ 65 hands, whose yearly wages amount to.....$38,800

They consume 2,066 tons Pig Lead,	$309,900
" " 50,000 gals. Oil,	50,000
" " 131,000 " Vinegar,	10,480
" " 50,000 bushels Coal,	2,500
" " 150,000 Kegs,	19,500
	$392,380
They keep four steam engines running, and produce 2,754 tons of White and Red Lead, valued at	$443,394
The capital lying dormant in buildings, machinery, and ground used in the business, is	$73.000

In the manufacture of this article, although the lead is brought from a distance, the price of labor, and fuel as it rates in this city, enables the manufacturer here of white lead to compete with those nearer the location of the mineral, but further removed from the fuel. The regular supply here is uninterrupted by any contingency of the seasons, while in the winter of 1856–'57 the scarcity of coal in the western cities caused the stoppage of lead works in them. The fact that our manufacturers of this article daily receive orders from consumers in cities where there are extensive lead works in operation, is conclusive as to the superiority of Pittsburgh lead. One of the lead factories (W. C. Stockton & Co.,) has lately introduced the manufacture of zinc paints, with great success. Heretofore they were made in New York and Philadelphia, but can be made here as low, if not a per cent. better than in the East. So far, the demand for the article is fully equal to the supply, the quality being the same as that from eastern houses. Our most extensive painters are using it. The City of Memphis, one of the most elegant steamboats afloat on the western waters, is painted with this article.

It will be noticed on a comparison of the white lead business of 1857 with that of 1837, that there is a falling off of five factories, but it will also be observed that the three factories of 1857 produce 2,754 tons of lead, where eight factories in 1837 produce 902 tons, being an increase of over two hundred per cent.

CHAPTER XIX.

GLASS.

Arrangements for the manufacture of this article were commenced at Pittsburgh by Gen. James O'Hara, in company with Major Isaac Craig, in 1796. Mr. Wm. Eichbaum, of Philadelphia, was engaged to direct the erection of the works. We extract from a letter written by Major Craig, dated "Pittsburgh, June 12, 1797," to "Col. James O'Hara, Detroit," published in Craig's History of Pittsburgh, the following remarks in relation to the first movements: "I then took Mr. Eichbaum up the coal hill, and showed him the coal pits, called Ward's pits, and the lots on which they are, with all of which he was well pleased, both as to situation and convenience of materials for building. I therefore immediately purchased of Ephraim Jones, the house and lot near the spring, for one hundred pounds, and have made application to Ephraim Blaine for the two adjoining lots, which no doubt I will get on reasonable terms. These three lots are quite sufficient, and we are now quarrying lime and building-stone, both of which are found on the lot. James Irwin is engaged to do the carpenter work; scantling for the principal building is now sawing; four log-house carpenters are employed in providing timber for the other buildings, and I am negotiating with a mason for the stone work." Although this enterprise of Gen. O'Hara and Major Craig is usually considered the first step toward the creation of our present glass business, yet we are informed by William M'Cully, one of our oldest glass manufacturers, and a practical workman, having learned his trade in the glass house of Gen. O'Hara, that in 1795 there was a small window glass factory at what is now called Glass House Ripple, on the west side of the Monongahela, known in the early times as "Scott's," having an eight pot furnace. The making of glass was carried on with wood, and there was made three boxes to a blowing.

The first glass house of Gen. O'Hara had but eight pots, whose capacity was equal to three boxes to a blowing. To his perseverance Pittsburgh is indebted for the establishment of this important branch of her manufactures, Major Craig having declined any further con-

nection in the business in 1798. He built in 1802 additional glass works, and made preparations to carry on the flint glass business, sending an agent to England for the purpose of procuring workmen, but the person returned unsuccessful from his mission. The progress of the business as gathered from the various publications mentioned in the course of this work, and from oral information, may be thus grouped:

In 1803,	Glass was manufactured to the amount of	$12,500
	and glass cutting was done to the value of	500
In 1807,	O'Hara's glass factory is mentioned as producing glass ware to the value of	18,000
In 1809,	the white glass works of Messrs. Robinson & Ensell, were in operation.	
In 1810,	there were three glass works, producing flint glass to value of	30,000
	bottle and window glass to value of	20,000
		50,000
In 1813,	There were five glass factories in the town, producing flint and green glass to the value of	170,000
In 1826,	there were in operation in Pittsburgh and vicinity, 7 glass works, viz:	
		Boxes.
	O'Hara's two works, called Pittsburgh Glass Works,	6,000
	"Birmingham," opposite Pittsburgh	4,000
	New Albany, at the mouth of Redstone creek, 4 miles below Brownsville	4,000
	"Benedict Kimber," at Bridgeport or Brownsville	4,000
	"New Boston," at Perryopolis on Youghiogheny	2,000
	Williamsport, occupied by W. Ihmsen	3,000
	Geneva Works, established by Albert Gallatin,	4,000
		27,000
	Valued at	$135,000
	In addition to which was made flint glass to value of	30,000
		$165,000
In 1831,	there were eight glass houses, four flint and four window glass, employing 102 hands, using 7,000 cords of wood, 700 tons of sand, 1,000 barrels of salt, 40,000 pounds of potash, 150,000 bushels coal, and producing glass to amount of	500,000
In 1837,	there were, as by the table on page 89 of this volume, thirteen glass works, viz. 6 flint, 5 window, 1 vial, and 1 black. Which establishments, as per table, employed 444 hands, the number of employees in four of them being omitted. There was produced $628,050 worth of glass, the production of one factory not being given, which would probably swell the amount to	728,000

In 1857 there are thirty-four factories, as will appear by the table on the following page:

TABLE showing the GLASS HOUSES in and around Pittsburgh, in 1857.

Style of Works.	Style of Firm.	Location of Office.	When established.	Who by.	Cupolas.	No. Pots.	Factor's.	Description of glass manufactu'd.
Birmingham	C. Ihmsen & Co.,	No. 133 & 135 First st	1810	C. Ihmsen	5	60	5	Green, blk & flint
Duquesne	George A. Berry & Co.,	" 92 " "	.....	Geo. A. Berry	2	16	2	Window.
Eagle,	F. Bobe,	" 135 Water "	1853	Bobe & Albeitz	1	7	1	Vials, &c.
Empire,	Wm. M'Cully & Co.,	" 14 & 16 Wood "	1852	Wm. M'Cully	1	12	1	Window.
Fort Pitt,	Curling, Robertson & Co.,	" 17 " "	1830	Curling & Price,	2	21	1	Flint.
Mastodon,	T. A. Evans,	Birmingham,	1855	T. A. Evans,	1	6	1	Flint vial.
Pennsylvania,	S. M'Kee,	No. 102 Second st	.....	S. M'Kee & Co.,	3	26	3	Window & vials.
Penn,	Fred'k R. Lorenz,	" 63 Water "	1796	Gen'l. O'Hara,	3	25	3	" "
Pittsburgh Flint,	Bakewell, Pears & Co.,	" 33 Wood "	1808	Bakewell & Page,	2	20	1	Flint.
Pittsburgh Vial,	Wm. M'Cully & Co.,	" 14 " "	1837	Wm. M'Cully	1	7	1	Vials.
Pittsburgh Glass,	A. & D. H. Chambers,	" 117 Water "	1841	Anderson, C. & Co	3	25	3	Window & vial.
Pittsburgh Green Glass,	E. Wormser & Co.,	" 22 Market "	1847	Chambers & Agnew	1	7	1	Green glass.
Pittsburgh City,	Cunningham & Co.,	" 119 Water "	1850	Cunningham & Co	2	15	2	Window & vials.
Phœnix,	Wm. M'Cully & Co.,	" 14 Wood "	1833	Wm. M'Cully	1	5	1	Black bottles.
Sligo,	" " "	" " "	1824	F. Lorenz	1	12	1	Window.
	Adams, Macklin & Co.,	Ross & Water "	1831	Adams, Macklin & Co.	2	20	1	Flint.
	Bryce, Richards & Co.,	No. 41 Wood "	1850	Bryce, M'Kee & Co	2	20	1	"
	James B. Lyons & Co.,	" 116 Water "	1837	Parks, Campbell & Co	2	20	1	"
	Ledlie & Ulam,	Market & Wood	.....	Mulvany & Ledlie	2	20	1	"
	F. & J. M'Kee,	No. 23 "	1853	F. & J. M'Kee	1	9	1	"
	Phillips & Best,	Try & Second sts	1840	Wm. Phillips	2	20	1	"
					39		34	

These 34 Glass Factories are carried on by nineteen firms, who have employed in the factories—

1,982	hands, whose yearly wages are	$ 910,116.00

In the manufacture of Glass they consume

5,736	tons Soda Ash,	458,880.00
13,008	" Sand,	130,080.00
637	" Lead,	89,730.00
326	" Saltpetre,	65,200.00
7,035,000	feet of Lumber,	85,525.00
3,952	kegs of Nails,	10,856.00
161½	tons Bar Iron,	8,490.00
882	" German Clay,	2,646.00
2,820,668	bushels Coke and Coal,	141,024.40
276,500	Fire and common Brick,	3,450.00
3,173	tons Fire Clay,	6,346.00
5,299	cords of Wood,	15,897.00
238,940	bushels Lime,	47,788.00
4,160	barrels Salt,	7,280.00
442	tons Pearls,	66,300.00
1,514	" Straw,	13,626.00
40	" Castings,	2,000.00
90	" Willows,	12,600.00
	Total,	$2,078,734.40

They run twenty steam engines, and produce

6,340	tons Flint Glass,	$1,147,540.00
561,600	packages Window Glass, 50 feet each,	1,123,200.00
131,700	" Vials, Bottles, Druggists' ware, &c.	329,250.00
80,000	Demijohns,	32,000.00
	Total,	$2,631,990.00

To give some further idea of the extent of these manufactories, is enumerated below the real estate of one firm in the business. They have and use

10 acres of ground,
3 Factories,
54 Dwelling houses,
3 Cutting houses,
2 Grinding mills,
3 Coal houses,
2 Flattening houses,
3 Sand houses,
3 Lime houses,
3 Mixing houses,
3 Pot houses,
3 Packing houses,
4 Store houses,
2 Box houses and shop,
1 Mould house,
1 Blacksmith shop.

STAINED GLASS MANUFACTORY.

An establishment for the production of stained glass after the style of the ancient Gothic churches, and in modern patterns, is among

the manufactures of Pittsburgh. It is carried on by Wm. Nelson, corner of Short and Water street, by whom it was established in 1852. It is the only one of its kind in this city or vicinity. For this species of manufacture there is but a limited demand, and consequently the figures composing its statistics, are not heavy in amount. The principal demand arises from churches and steamboats. The quality of the work turned out is not surpassed in the East or West. No point at which the business is carried on, possesses any advantages over this in the production of this article, while in fuel and in glass, the bulk of the materials used in this manufacture, the advantage is heavy in favor of Pittsburgh.

Tinted and enameled glass in lead frames properly ornamented can be furnished from this manufactory for 38 cents per square foot, and ornamented stained glass, from 75 cents to $1.50 a foot. The production of this article employs four hands, whose wages amount yearly to $1,872; and the value of the work turned out is about $10,000.

LOOKING-GLASS MANUFACTORIES.

The wants of the West and South for mirrors are largely supplied from Pittsburgh. She is able to compete so successfully in the manufacture of looking-glasses with all other points where they are produced, that she is rapidly becoming "the head of the market" for this article of consumption.

There are in the city the following manufacturers of the article:

J. J. Gillespie,.....	76	Wood st.,	established	1838,	by Gillespie & Kennedy.
Jas. Love & Co.,.....	110	" "	"	1850,	" James Love.
T. Kennedy, Jr. & Co.,.....	62	" "	"	1847,	" Thos. Kennedy, Jr.
Wm. Pickersgill, Jr.....	75	" "	"	.....	

These four factories employ 88 men, whose yearly wages amount to....	$ 36,400
They consume Looking-Glass Plates, to amount of.....	55,000
" " 600,000 feet of Lumber,.....	12,000
" " 230,000 " " Veneers,.....	23,000
" " Varnish,.....	1,800
" " Gold and Silver Leaf, to value of.....	32,000
" " Boxes, to value of.....	5,540
" " sundries,.....	16,000
Total,.....	$152,740
They produce 194,000 German Plate Looking-Glasses, worth....	$145,000
" " French " " " " ...	25,000
	$170,000

In connection with the foregoing article it is proper to mention a

GILT MOULDING MANUFACTORY,
ESTABLISHED AND CARRIED ON BY CAMPBELL & POLLOCK,
No. 95 Wood Street.

This manufactory was commenced in 1855 by the above firm, for the purpose of meeting a growing demand in the West for mouldings of a certain style, for the finishing of rail road cars, picture and looking-glass frames, &c.

So far as we can learn, there is no other factory of this description west of the mountains, and but very few in the United States. In consequence of the increasing demand for cars upon our Western roads, this article will soon rank among the more important of Pittsburgh manufactures. Although but a new branch of business here, and but little known as yet in the section of country in which the proprietors expect to find their largest market, still large orders have been filled for various companies throughout the West.

These establishments employ ten men, whose yearly wages are	$ 4,160
They produce 500,000 feet of Gilt Moulding, worth	25,000
And employ machinery, valued at	3,500

CHAPTER XX.

MISCELLANEOUS.

BRASS FOUNDERS.

There are the following brass founders in the city:

Andrew Fulton,	No. 93	First	street,	established 1835,	by A. Fulton.
Maffitt & Old,	" 127	"	"	1820,	" John Sheriff.
Phillips & Co.,	" 109	"	"	.....	" .....
A. & J. M'Kenna,	" 128	Third	"	1855,	" A. & J. M'K.

These employ 59 hands, whose yearly wages amount to	$22,984
They consume 33 tons Copper,	19,800
" " 4 " Tin,	600
" " 4½ " Lead,	630
" " 6¾ " Zinc,	945
" " 33,540 bushels Coal	1,677
Total,	$46,636

Also a large amount of Gas Fixtures and Iron Tubing.

They produce Brass Castings, worth in the rough state, ... $36,000

Finished up they would be worth 40 per cent. more.

Besides brass castings, they turn out a large amount of gas fixtures, steam heating tubing, &c.

There are in addition to the above, some five or six small brass foundries doing a limited business, employing from one to two hands each.

Bell founding is extensively carried on by one of the above, (Andrew Fulton,) who also manufactures Babbit's metal and Fulton's metallic packing.

JAPAN WARE and PRESSED GOODS MANUFACTORY.

An establishment where the above description of goods are made on an extensive scale, is owned by JOHN DUNLAP, corner of Market and Second streets, who established the business in 1840. Every variety of Japanned goods, of beautiful designs and fine workmanship, and also numerous articles in the pressed tin ware line, are annually turned out.

This manufactory employs forty hands, whose yearly wages are $16,640. There are consumed in the production of the articles made by them, 2,500 boxes of tin, with block tin, lead, wire, japan, bronze, &c., to the value of $10,000. The productions are worth, at a low estimate, $60,000. The machinery employed in the business, and the buildings and ground used to carry them on, represent a capital of $15,500.

BRITANNIA WARE

Is quite extensively manufactured by ORIN NEWTON, at No. 129 Second street, which business he established in 1821. He turns out a great variety of articles. There are employed in the factory eighteen hands, whose wages average yearly $4,680; and the ware produced is worth $18,000.

WIRE CLOTH MANUFACTURING

Is prosecuted by J. R. TAYLOR & Co., No. 63 Liberty street. The establishment was founded by Thomas Pindar, in 1835. The firm employ four men, and produce articles in their line of business to amount of $10,000; consuming in the production, wire to amount of $3,000, and brass to amount of $800.

AGRICULTURAL IMPLEMENTS

Are among the manufactures of Pittsburgh. There are the following firms engaged in the business:

Holmes & Collins,.....129 Wood st., established 1852, by E. R. Shankland.
Wardrop, Stout & Williams,.....57 Fifth " " 1853, " Jas. Wardrop.
Wm. Bastean,.....568 Penn " " ..... " .....
These produce Agricultural Implements to amount of.....$80,000

KEG FACTORIES

Are a natural result of the immense quantity of nails manufactured here. Of these there are three, viz:

Firm.	Location.	Established.	Who by.	Capability yearly.
Poor & Reed,	Cor. Baldwin & Butler,	1853,	Poor & Reed,	200,000 kegs
G. W. Gregg & Co.	Mechanic street,	1847,	R. Savery,	375,000 "
Kraft & Lightner,	Cor. Taylor & Butler,	1856,	Kraft & Lightner,	375,000 " 125,000 bbls.

They employ 180 men, whose wages, running full time, would amount to.....$ 56,000
They consume Lumber, to amount of..... 58,500
" " 5,400,000 Hoop Poles, worth..... 21,600
" " 30,000 bushels Coal,..... 1,500

Total,.....$137,600

They produce Kegs and Barrels yearly, to amount of.....$156,000
They keep three steam engines running.

RAIL ROAD CAR BUILDING

Is also increasing in this city; there are now two regular rail road car factories. As yet they are employed in constructing burden cars. They are:

Joseph Tomlinson,..Corner Duquesne Way and Cecil alley, established 1852.
Wm. Smith & Co.,... " Carroll & Smallman street,..... " 1856.

They employ sixty-one hands, whose yearly wages amount to.....$28,538.00
" consume Lumber to amount of..... 14,000.00
" " Wrought and Cast Iron, and Springs, to amount of.... 10,991.99

Total,.....$53,529.99

They produce Cars to the amount of.....$65,000,00

THE LAWRENCE BUCKET FACTORY

Ranks among our extensive manufactories for the production of a single article. It was established in 1854, by Eaton, Shea & Co.; is now owned and run by Eaton, Bailey & Co. It has a capacity for making 900 buckets and 125 tubs per day. It is the only one in the city, and there are but three others, one at Beaver and two at Marietta, this side of St. Louis. The articles which are turned out by this factory find sale in advance of their production throughout the West, and the firm is unable to keep pace with their

orders. This establishment employs about thirty hands, and turns out 270,000 buckets and 50,000 21-inch tubs in a year. The capital in the machinery, building and lot, is $30,000. There is consumed in the producing of the above-mentioned quantity of tubs, &c., 50,000 cube feet of timber a year, worth $4,000, beside hoop iron, paints, wire, &c., to the value of $5,000.

COACHES AND CARRIAGES

Are among the manufactures of this community which are yearly shipped in quantities to the West and South-west. The character of their workmanship and beauty of finish and design, has given carriages from this city a fair reputation in the western and south-western markets, which the yearly increasing orders show is well sustained by the use of the vehicles. There are six manufactories besides several jobbing shops, viz:

Factory.	Firm.	Location.	Established.	Who by.
Excelsior,	Johnston, Bro. & Co.,	Cor. Rebecca and Belmont sts., Allegheny,	1850,	Johnston & Bro.
Allegheny,	John South,	Federal & N. Common, "	1843,	John South.
Pittsburgh,	M. L. Stephens,	46 Diamond a'y, Pittsb'gh.	1846,	E. M. Bigelow.
	J. S. Schaffer,	Cor. Diam. ay & Decatur st.	1856,	J. S. Schaffer.
	Joseph White,	Cor. Penn & Boundary "	1841,	Jos. White.
	C. West,	151 Penn street,	1847,	C. West.

These establishments employ 117 hands, whose wages yearly amount to.	$ 60,800
They consume Springs and Axles, to value of	3,500
" " Lumber to amount of	5,700
" " Paint, " "	2,450
" " Bar Iron, " "	7,600
" " Coal, " "	550
" " Trimmings, " "	22,100
" " Varnish, " "	17,500
Total,	$120,200
They produce work to the amount of	$145,000

In addition to the above there are some four or five jobbing shops, whose work annually amounts to about $30,000.

WAGON MAKING.

The making of wagons has always been an important branch of Pittsburgh manufactures. They are sent in large quantities to Texas, Louisiana, Mississippi, Arkansas, and in fact to all the States in the Mississippi valley. In 1849 large numbers of them were used by California emigrants in their journey across the

plains; and on the "Oregon trail" are many furrows impressed by the wheels of Pittsburgh-built wagons. Lumber and iron, the two articles entering into their construction, are at this point so cheap that an immense advantage is gained over all other locations. There are now engaged in the business here the following firms:

Firm.	Location.	Established.	By whom.
Frederick Æschleman,	Beaver street, Manchester,	1842,	F. Æschleman.
John A. Endres,	Ohio st., near East Lane, All'y	1853,	John A. Endres.
Joseph Fisher,	East Lane, near Ohio, "	1847,	John Fisher.
Hemphill & Shaberger,	Ohio and Sandusky, "	1844,	H. DeHaven.
Harper & Caughey,	Beaver st., Manchester,	1854,	Harp. & Caugh'y.
Frederick Kealer,	East Lane, near 4th, Alleg'y,	1842,	F. Kealer.
Wm. M'Kee,	Cor. Diamond ay. & Smithfield,	1843,	W. M'Kee.
Phelps, Carr & Co.,	No. 1 St. Clair, Pittsburgh,	1832,	C. Townsend.
Geo. Sweitzer,	Carson st., Birmingham,	1851,	Geo. Sweitzer.

These employ 180 hands, whose wages yearly are	$ 77,920
They consume Iron, Axles, Springs, &c., to amount of	26,000
" " Lumber, to value of	30,800
" " 80,000 bushels of Coal,	4,000
Total,	$138,720
And produce 1,810 Wagons, Carts, Timber-wheels, &c., worth	$159,500

These vehicles range from the small one-horse cart to the heavy six-horse road wagon. There are in addition to the firms given above, twenty shops which make each a few wagons yearly, and do a large amount of repairing; they employ 45 men, whose yearly wages are $14,560, and the value of their work is about $45,000.

TANNERIES.

There are in this community thirteen tanneries doing business on a handsome scale, besides several whose transactions are quite small. The thirteen are as follows:

Firm.	Location.	Established.	Who by.
Hays & Stewart,	100 Liberty,	1800,	Wm. Hays.
Hare & Brown,	Duquesne Boro.,	1855,	Hare & Brown.
C. Kærcher & Son,	74 Smithfield st.,	1838,	C. Kærcher.
Chas. Keifer,	Spring Garden,	1849,	C. Keifer.
Henry Klunk,	Duquesne Boro.,	1851,	
G. & M. Lappe,	" "	1842,	G. & M. Lappe.
J. C. Lappe,	Chesnut & O'Hara, Alleg'y,	1843,	J. C. Lappe.
M'Cune & Young,	109 Liberty,	1823,	Wm. Young.
Frank Peopp,	Spring Garden,	1853,	
John H. Ralston,	Cor. Locust & Duq. Way,	1829,	J. H. Ralston.
John Robenstein,	Duquesne Boro.,	1848,	John Robenstein.
A. & C. Taggart,	" "	1854,	A. & C. Taggart.
Gotleib Wetach,	Spring Garden,	1855,	G. Wetach.

There are employed by these firms 132 hands, whose yearly wages are..... .....$ 54,902

In these tanneries 477 vats and eight steam engines are used in the transaction of the business.

They consume 31,800 Ox Hides, worth.....$174,900
" " 1,580 doz. Calf Skins, " 18,990
" " 4,580 " Sheep " " 38,640

Total,.....$287,432

They produce Sole Leather, to amount of.....$413,400
" " dressed Calf Skins, " " 31,600
" " " Sheep " " " 18,320

Total,.....$463,320

The capital in the machinery, buildings, &c., is.....$77,500

BREWERIES.

The reputation mentioned in the thirteenth chapter of this volume, as attaching to the beer and porter made in this city in 1808, has always been retained by it, and at the present day Pittsburgh ale is considered the best article brewed in the United States. An article of Kennet ale made by one of our breweries, has a wide sale, and the demand both in the East and in the West is still increasing, incited by the fact that an equal article to the imported is furnished at less price. With an equal skill in brewing to that possessed by the brewers in any other city, the pure soft water of the Allegheny river enables ours to turn out an article so superior, that it has taken and maintains the head of the market, in most every section of the Union.

There are now engaged here in the business five firms, and one in malting, as follows:

			Capacity.
Allegheny,.....	R. A. Campbell.....	Rebecca st. Allegheny, established 1832, by W. A. Irwin,.....	400 barrels weekly.
Oregon,.....	Rhodes & Verner,.....	No. — Penn st., Pittsb. established 1854, by Rhodes & Verner.....	400 " "
Point,.....	G. W. Smith.....	Cor. Pitt & Duq. Way, established 1826, by Geo. Shiras.....	500 " "
Phœnix Steam,....	A. Woods,.....	Wilkins & Smallman, established 1845, by Woods & Hughes.....	1,000 " "
Wainwright's,.....		Lawrenceville,.....	400 " "
Point Malt House,.	W. H. Garrard,.....	No. 17 Water street, established 1856, by W. H. Garrard.....	..... " "

These five breweries and one malt house employ 140 men, whose yearly wages amount to.....$ 47,420

They consume 380,000 bushels Barley yearly,..... 456,000
" " 40,000 " Rye, " 24,000
" " 235,000 pounds Hops, " 58,750
" " 40,000 new Barrels, " 80,000

Total,.....$666,170

They keep six steam engines running, and produce
43,000 barrels Ale and Porter, worth.....$435,000
180,000 bushels Malt, " 288,000
Total,.....$723,000
The capital in buildings, machinery and lots, used for the business, is..$120,000

There are also twenty-three LAGER BIER breweries, viz:

Brewer.	Location.	Brewer.	Location.
John Beck,.....	541 Liberty street.	Leonard Karns,...	cor. 2d & E. Lane, All'y.
Anth'y Bennett,..	Quarry "	John Kern,.....	Chesnut street, "
Adam Byerlein,...	455 Liberty "	Languish & Co....	570 Liberty.
——— Deppel,.....	Manchester.	Lutz & Walz,.....	Diamond alley.
Conrad Eberhart,.	Ohio ab. Chesnut, All'y.	Miller & Lang,....	Pennsylvania Avenue.
——— Ernst,.....	Birmingham.	John Mittler,.....	Birmingham.
G. & P. Gerst,.....	cor. E. Lane & 2d, All'y.	John Nusser,.....	"
Giess & Nessel,....	East Lane. "	Seidly & Benz,...	cor. E. Lane & 2d, All'y.
Sebastian Haid,...	cor. Ohio & Canal. "	John A. Straub,.	cor. Ohio. st. & Duq. Bor.
Anth'y Hoffman,.	Chesnut street. "	G. F. Schenck,...	Diamond alley.
Fred. Krauss,.....	Pennsylvania Avenue.	John Schmeltz,..	Birmingham.
P. Kallenborn.	" "		

They employ 59 hands, whose wages amount to.....$ 18,720
" consume 68,000 bushels Barley,..... 81,600
" " 69,000 pounds Hops,..... 17,300
Total,.....$117,620
Twelve steam engines are kept running, and they brew 113,000 kegs or quarter barrels Lager Bier, worth.....$141,250

STEAM CRACKER BAKERIES.

Of these there are two, viz:—The DUQUESNE, established 1850, by Rhodes & Verner, Nos. 189, 191, 193 and 195, First street, now carried on by S. Barnes & Co. R. & J. DAVIS, No. 91 Liberty st., established in 1831 by John Davis.

There are also the following firms who make crackers by hand machinery:

M. Connelly,.....cor. Irwin and Penn.
H. Rawrie,.....Ohio, near E. Lane, Allegh'y, established 1855, by H. Rawrie.
John Sheppard,.....317 Liberty,..... " 1845, " J. Sheppard.
G. Skinner,.....203 " ..... " 1852 " G. Skinner.

These 6 factories employ 39 hands, whose yearly wages are $12,064
They consume 10,450 barrels Flour,.....$73,150
" " 24 tons Butter,..... 3,840
" " 69 hhds. Sugar,..... 5,600
" " 30,000 bushels Coal,..... 1,500
" " 220 cords Wood,..... 880
Total,.....$97,034
They produce Crackers to amount of.....$114,000

Large quantities of these crackers are shipped to the South and West, and Pittsburgh crackers are in many cities an article of regular quotation in the market reports.

MARBLE WORKS.

There are in this community six marble cutting establishments, where are cut all descriptions of monuments, images, furniture marbles, &c., &c. The workmen employed in these works are of great skill, and many of the monuments worked out by them evince much talent. The beautiful grounds of the Allegheny Cemetery contain numerous monuments from these establishments, which are subjects of admiration to visitors from a distance, as well as our own citizens. The following firms are located as follows:

J. Lawton,.....	No. 333 Liberty st.....	Established 1855
John M'Cargo,.....	" 335 "	" 1856
Edmund Wilkins,.....	" 253 "	" 1843
John Wilkins,.....	" St. Clair st.	" 1848
Robert Watson,.....	Ohio & Beaver st. Allegh'y.....	" 1847

These five firms, employ 51 hands, whose wages amount to $23,868.

They consume 350 tons of Marble, and do work in that line of business to amount of $45,000.

There is one other establishment which declined being mentioned.

CABINET WARE AND CHAIR MANUFACTURE.

The manufacture of cabinet ware has always occupied a prominent position in the business of Pittsburgh. The trade is yearly increasing, and large quantities are annually exported. There are now in the city the following firms:

Firm.	Location.	Estab'd.	By whom.
Robert Fairman,.....	Federal st. South Common, Allegh'y.	1837....	R. Fairman
J. D. Fackiner,.....	No. 103 Smithfield st.....	1851..	J. D. Fackiner.
Hammer & Dauler,...	" 178 " "	1838...	Hammer & Dauler.
Jacob Hockuly,.....	East Lane, near First st., Allegh'y...	1854...	J. Hockuly.
John M. Irwin,.....	No. 118 Fourth st. Pittsb'g.....	1842...	Jno. M. Irwin.
C. F. Klopfer & Co.....	corner of Wayne and Penn sts.....	——...	W. E. Stevenson.
James Lemon & Co....	No. 96 Fourth st.....	1830...	Lemon & Powers.
A. Milliken,.....	" 64 and 179 Smithfield st.....	1832...	A. Milliken.
Joseph Meyers,.....	" 424 Penn st.....	1843...	Joseph Meyers.
H. H. Ryan,.....	" 31 Fifth st.....	1837...	H. H. Ryan.
Geo. Singer,.....	" 111 Fourth st.....	1832...	Geo. Singer.
Peter Sneider,.....	Carson and Harmony, Birmingham.	1851...	Peter Sneider.
G. Schroder & Co.....	Carson and Denham, "	1851...	G. Schroder & Co.
C. Suck,.....	No. 271 Penn st.....	1853...	C. Suck.
J. W. Woodwell,.....	" 97 and 99 Third st.....	1831...	J. & J. W. Wood-well.
T. B. Young & Co.....	Corner of Third & Smithfield sts...	1840...	T. B. Young & Co.

These sixteen firms employ 504 hands, whose yearly wages amount to	$196,500
They consume 2,257,000 feet of Lumber, worth	45,140
" " 494,000 " Veneers "	29,640
" " 5,258 gals. of Varnish "	8,412
" " 45,000 bushels Coal, "	2,250
" " Hardware to amount of	17,850
" " Mahogany and other fine woods to value of	4.500
Total,	$304,292

They keep eight steam engines running, and produce Chairs and Cabinet Work to value of $503,000.

In addition to these there are a number of small shops, in which the proprietor and occasionally an additional workman is employed, who produce articles suited to a class of retail customers. The capital in the grounds, buildings, and machinery employed by the above sixteen firms is $179,700.

The workmanship upon the articles made is of the best quality, and the styles are fully equal to those of eastern houses.

SOAP AND CANDLE MANUFACTURES.

Of these articles there is a heavy amount made here. The following are the principal firms:

Firm.	Location.	Established.	By whom.
Thomas Arnold,	Allegheny,	1849	Thomas Arnold.
John Irwin & Co., Penn Candle Works,	Pa. Avenue,	1847	Crumpton & Co.
A. Wilson & Co.,	No. 47 Ross st.,	1834	A. Gilmore.
Stout & Hazen,	Allegheny,	1853	Stout & Hazen.
Wilson & Gorman,	No. 194 Fourth st.	1826	G. W. Jackson.
W. & H. Walker,	3d & Middle st., Alleg'y.	1837	W. & H. Walker.
John Matthews,	No. 92 Third st.,	1854	H. Beidler & Co.

These seven firms employ 102 hands, whose yearly wages amount to..	$ 32,920
They consume 3,220,000 pounds of Tallow, worth	353,000
" " 3,524 barrels of Rosin, worth	12,350
" " 3,100,000 pounds of Grease, worth	279,000
" " 15,000 " Palm Oil, worth	2,500
	$679,770
They produce 4,420,000 pounds of Soap, worth	$245,000
" " 1,400,000 " of Candles, worth	140,000
" " 1,800,000 Star " "	475,000
	$860,000
The capital in the buildings, ground and machinery employed in the business amounts to	$84,000

There is one other firm in the business which declined giving the value of their transactions, whose figures would probably raise the amount to between $900,000 and $1,000,000.

GLUE FACTORY.

C. PRESSER carries on a glue factory on Marion street, near Pa. Avenue, which he established in 1832.

He employs eight hands, whose yearly wages amount to $1,560.00
Uses materials to amount of 3,500.00

5,060.00

And makes 50,000 lbs. Glue annually, worth $7,500.

The machinery, buildings, and ground used in the business, are worth $2,000.

LIME.

There are five firms engaged in the production of lime, viz: R. Milligan, Liberty st. near depot, John Kearney, Moore Thompson, Mrs. Baine, ——— Rodgers.

They employ 50 men, whose wages amount to..... $17,200
Consume 100,000 bushels Coal, which " "..... 5,000

$22,200

They produce 300,000 bushels lime, worth $48,000.

In the carrying on of this business, the above firms employ 40 horses and 15 carts and wagons.

NEW FLEXIBLE FIRE PROOF and WATER ROOFING.

This is a new branch of manufacture just going into operation in this city. A patent for it has been applied for. The patentees and manufacturers are Messrs. ADAIR & GRANT, No. 57 Water street. The article is very flexible and elastic, undoubtedly water proof, and the material being laid on canvas, the roofing has a very substantial character. Large orders have already been received by the above firm.

SLATE ROOFING.

There is one firm here which carries on the slate roofing business extensively, taking contracts for work in all the towns around this city, and in the cities of Cincinnati, Chicago and St. Louis.

THOMAS ARNOLD, whose office is at No. 45 Wood street, established the business here in 1845, and has carried it on successfully ever since, as is instanced above by the taking of contracts in other cities. We believe he is the only master slater in the West who is to any extent engaged in the business. The fact of his having frequent engagements at points throughout the West, is evidence that

the style and quality of his work is entirely satisfactory. He employs 15 hands, whose yearly wages are $7,500, and he uses in the course of his business five hundred tons of slate, and $1,800 worth of copper for nails, &c. The cost of slate roofing is given in the chapter of this volume on manufacturing advantages.

STEAM WOOLEN STOCKING FACTORY.

A manufactory of the above description is carried on by C. DALY, corner Fifth street and Market alley. It was established in 1838 by M. Daly.

There are employed by this firm 100 hands, whose wages amount annually to	$15,600
Woolen yarn and dye stuffs are used in the manufactures to the amount of	25,500
	$41,100

The hosiery made at this establishment is worth $50,000.

There is one engine employed, and the value of the machinery used in the business is $5,000.

MATCH FACTORIES.

Of these there are two, viz:

Valentine Benz, 573 Liberty street, and John Buhoup, Duquesne Borough.

These two establishments employ 22 hands, whose wages are		$3,482.00
They consume Lumber to amount of	$380 00	
" " Phosphorus to " "	400 00	
" " Brimstone to " "	130 00	
" " Glue " " "	240 00	
		$ 1,150.00
Total,		$ 3,632.00
They make yearly 15,360 gross of Matches, worth		$10,752.00

DUQUESNE ZINC WASHBOARD FACTORY,

Is carried on by John Buhoup, in Duquesne Boro, by whom it was established in 1852.

In it there are employed five hands, whose wages amount yearly to..... $1,500.00

In the production of washboards, there is consumed

Zinc to the amount of	$3,500.00	
Lumber to the amount of	1,125.00	
Nails, " " "	300.00	
		$4,925.00
Total,		$6,425.00
He makes 3,000 doz. Wash Boards, worth		$6,750.00

The buildings and machinery used in the business are worth $2,500.00. One steam engine is kept running.

PORCELAIN TEETH MANUFACTORY.

There is one factory for the production of teeth, as above; it is owned by Otto Kunz, No. 128 Third street, by whom it was established in 1850. He manufactures about 10,000 teeth a year, worth $2,000.

KID GLOVE FACTORY.

There is one factory for the making of kid and other descriptions of leather gloves. It was established by R. Dean, in 1844, by whom it is still carried on, at No. 654 Penn street.

He employs eight hands, whose wages amount to..... $1,250.00

" consumes 2,000 Kid skins, 500 Buck skins, beside German Lamb skins and Furs to a small amount.

There is made annually at this factory

160 doz. Kid Gloves, worth	$1,600	
200 " Buck " "	2,000	
300 " other " "	1,800	
		$5,400.00
Total,		$6,650.00

ALCOHOL.

A distillery of this article is kept in operation by James M'Laughlin, at Nos. 168 and 170 Second street. It was established by Martin & M'Laughlin, in 1850, and has been in successful operation ever since. The products of the establishment are principally sold in the eastern cities. There are six men employed in the distillery, whose annual wages amount to $2,600.00. There are distilled 5,000 barrels of alcohol and spirits, and 10,000 barrels of whiskey are yearly consumed in the production of those articles.

ETHEREAL OIL.

This article is manufactured at No. 68 Fourth street, by P. HAYDEN. The business was established here in 1850. He employs three men, whose yearly wages amount to $1,560. Uses in the making of the article 600 barrels of alcohol, and $6,000 worth of other materials, producing 20,000 gallons of oil.

LINSEED OIL.

There are three establishments for the manufacture of this description of oil in operation in the city, viz:

Mill.	Firm.	Location.	Established.	By whom.
Pittsburgh	Leonard Walter	424 Liberty st	1838	Hays & Painter.
Allegheny	D. DeHaven	Middle alley	1836	D. DeHaven.
	M. B. Suydam	Rebecca alley	1856	M. B. Suydam.

These consume 32,000 bushels Flax Seed, worth	$56,000
Employ twelve men, whose wages amount to	4,368
Total,	$60,368
There is made by the mills 52,000 gallons Oil, worth	$52,000
" " 26,000 bushels Oil-cake, worth	19,500
Total,	$71,500

There are three steam engines running in the mills.

LARD OIL.

This article is manufactured by two firms, viz: F. Sellers & Co., whose factory is at the corner of Pike street and Canal, and Wm. B. Kelly, whose factory is in the Seventh Ward, near Pennsylvania avenue. We give no statistics of these factories, as the one is a new establishment, and has as yet no figures to give—and we were unable to ascertain the yield of the other in time for this edition. The two will, we presume, produce something like 60,000 gallons yearly.

VARNISH FACTORIES.

Of these there are two in operation, viz:

Firm.	Location.	Established.	By whom.
Levi Wade	161 Liberty st	1840	Levi Wade.
Kelly & Douglass	Office 135 Smithfield st	1855	J. Finch & Co.

These employ 6 hands, whose wages annually are		$ 2,496.00
Purchase 1,500 gallons Oil, costing		2,625.00
" 75,000 lbs. Gums, "		22,500.00
" 600 bbls. Turpentine "		13,500.00
Total,		$41,121
Make and sell yearly 20,000 gallons Varnish	$40,000	
Sell Turpentine, Oils, Gums, etc., to amount of	6,500	$46,500.00

TOBACCONISTS.

There are seventeen firms engaged in the manufacture and sale of Tobacco, as given below:

Firm.	Location.	Established.	By whom.
Henry Dallmeyer	151 Liberty st	1852	Henry Dallmeyer.
John Fullerton	170 Wood st	1837	John Fullerton.
E. Gleason	Ohio n'r. E. Lane, Alleg'y	1842	E. Gleason.
John Hays	50 Fifth st	1848	John Hays.
E. Hurd	448 Liberty st	1845	E. Hurd.
Martin Heyl	423 "	1850	Martin Heyl.
S. P. Johnson	55 Hand st	1854	Johnson & McDonald.
Jas. A. Mazurie	337 Liberty st	1837	Jas. A. Mazurie.
E. T. Megraw	241 "	1856	E. T. Megraw.
Jas M. McDonald	c. Smf'd st. & Strawb'y al		
Christian Oyer	17 Smithfield st.		
W. & D. Rinehart	129 Wood st	1836	W. & D. Rinehart.
Geo. Sheffler	101 Smithfield st	1849	Geo. Sheffler.
J. W. Taylor	427 Penn st	1839	J. W. Taylor.
E. Upstill, Jr	349 Liberty st	1856	E. Upstill, Jr.
Geo. Weyman	cor. Sm'f'd st. & D'm'd al.	1823	Geo. Weyman.
Geo. Wilson,	43 Smithfield street	1840	Geo. Wilson.

In addition there are many exclusive retail stores, in some of which a limited amount of manufacturing is carried on, of which we take no account, although some of them are quite extensive.

The above 17 firms employ 198 hands, whose yearly wages amount to.	$ 61,776
They purchase 978 hhds. Tobacco,	195,600
" " manufactured Smoking and Chewing Tobacco,	75,320
" " imported Segars,	80,400
	$415,096
They produce 8,230,000 common Segars, worth	$ 24,690
" " 7,560,000 Half Spanish " "	52,920
" " 42,000 Havana " "	9,040
" " 850 kegs Twist Tobacco, "	25,500
" " 130,000 pounds Cut and Dry, "	14,300
" " 60,000 " Snuff, "	12,000
" sell Smoking and Chewing Tobacco, to amount of	85,320
" " imported Segars, " " "	100,000
" " Leaf Tobacco, " " "	120,000
Total,	$443,770

There are but three steam engines employed in this business, and the majority of the buildings being leased property, there is no return of capital in buildings, machinery, &c.

PAPER MANUFACTORIES.

There are two paper manufactories here, viz:

Buckeye,.....J. L. Shee,.....225 Penn....Established 1850, by J. L. Shee.
Manchester,.....J. Howard & Co. 84 Wood... " 1832, " J. Howard & Co.

These mills employ 57 hands, whose wages amount annually to.....$15,912
They consume 650 tons Rags,..... 54,000
" " 46,000 pounds Chloride Lime,..... 3,320
" " 50,000 bushels Coal,..... 2,500

Total,.....$75,732

They produce 456 tons Paper, worth.....$86,640
The capital in buildings, machinery and ground used for the business is $55,000

One of the mills runs by steam power and the other by water. There are three steam engines employed.

BOOK-BINDERS' BOARD FACTORY.

The MONONGAHELA STEAM PAPER MILL was established in 1854, by A. CULBERTSON, by whom it is still worked. This is the only manufactory of this kind in the vicinity. It is an extensive establishment, employing twenty hands, and manufacturing book-binders' boards exclusively. Though of recent origin, the quality of its productions has created an increasing demand for them in the East as well as in the West.

The capital in the building and machinery of this mill is $30,000. The office of the mill is at No. 191 Liberty street.

RAG AND PAPER DEALERS.

There are in the city three firms regularly engaged in this business, beside others who deal occasionally in the business. The three houses are—

I. W. Chadwick,.....149 Wood,.....Established 1847, by I. W. Chadwick.
H. M'Cullough & Co.,cor. Irwin & Penn, " 1838, " H. M'Cullough & Co.
J. L. Shee,.....225 Penn,..... " 1844, " J. L. Shee.

These firms employ a number of hands, and sell rags and paper to amount of $80,000 annually.

FLOUR MILLS.

There are in this community five flouring mills, viz:

Mill.	Firm.	Location.	Established.	By whom.
Allegheny City,	John Voeghtly & Co.	Chesnut and Canal,		
Birmingham,	Algeo & Co.	Carson and Craig,	1854,	Burke & Son.
Pittsburgh City.	L. Wilmarth & Co.	cor. Adams & Liberty,	1850,	W. & Noble.
Pearl,	Bryan, Kennedy & Co.	cor. Lacock & Canal,	1854,	B., K. & Co.
	M. B. Suydam,	Rebecca, near Craig,	1856,	M. B. Suydam.

Four of these only are in operation at present, the Pearl not running.

These employ 44 hands, whose annual wages are..... $ 18,300
They consume 475,000 bushels Wheat, worth....760,500
" " 45,000 " Corn, " 27,000
" " 25,000 " Oats, " 6,250
——— $793,750
Total,..... $812,050
They produce 103,500 barrels Flour, worth...$ 828,000
" " 162,500 bushels feed stuffs,..... 36,000
Total,..... ——— $864,500

These mills run eight steam engines.

Of the above mills, the "Allegheny City" has four run of stones, and a capacity of 75 barrels a day. The "Pittsburgh City" six pairs of stones, and a capacity of 400 barrels a day; and the "Pearl" a similar capacity.

SPICE MILLS.

There are two mills for the grinding and packing up of spices, viz:

F. Dravo,.....Allegheny,....estab'd 1848, by F. Dravo.
Baxter & M'Kee,...No. 117 Third st. " 1851, by M'Kee & Alcorn.

These employ 13 hands, whose wages amount to.....$4,732
Their sales of Ground Spices and other articles amount to.....$25,000

WHIP AND UMBRELLA MANUFACTORIES.

Of this branch of manufactures there are two, viz:

J. W. Tim & Co.....143 Wood, established 1848, by J. W. Tim.
Wells, Riddle & Co..86 Fourth, " 1855, " W., R. & Co.

Besides these firms there are some eight small shops where umbrellas are repaired and made; a limited amount of business is done, some $5,000 in all.

The two firms given above, consume material to amount of $17,000
Their entire sales amount annually to.....$34,000

SADDLETREE FACTORIES.

There are two of these in operation here, viz:

John F. Hague,.....123 Smithfield,.....established 1844,.....by Nealons & Hague.
A. Vance,..... 76 " ..... " 1837,..... " Geo. Fortune.
They employ five men, whose wages amount annually to.....$3,628
" consume materials to amount of..... 300
And make 5,000 Saddletrees, worth..... 5,000

COFFEE EXTRACT.

There are two firms engaged in the manufacture of this article, which is used by many as a substitute for coffee. The firms are

F. Felix & Son,.....446 Penn.....established 1842,.....by F. Felix.
Guttendorf & Co.,..... 15 " ..... " .....

These employ nine men, and among other material use $9,000 of sugar and molasses yearly. Their sales amount to $60,000 annually.

POTTERIES.

The burning of earthen ware is carried on to a considerable extent here. There are many advantages, which will probably in time render Pittsburgh quite a central point for the production of many varieties of this ware. The facilities which we possess for shipping this heavy article North, East, South and West, into nearly all the States of the Union, give this city a prominent position as a location for the transacting of the business, while the advantages of fuel are sufficient to decide the question of engaging here in the manufacturing. A proper survey of the surrounding country will, without doubt, so full are the hills of various qualities of fire clay, develop deposits of clay and flint, which in themselves and in combinations would furnish materials suitable for making many of the finer qualities of Queensware.

There are now engaged in the business here, the following:

Daniel Bennett,.....Cor. Washington and Franklin, Birmingham,
established by Bennett & Brothers,.....1844
A. N. Burchfield,.....Ohio, near East Common, ...Allegheny,
established by H. Stevens,.....1837
Euler & Sunshine,.....East Birmingham,
established by Euler & Sunshine,.....1846
Fœll & Alt,.....East Birmingham,
established by Conrad Roupp,.. 1852
Henry Petrix & Co,...Ohio, near North,.....Allegheny,
established by Henry Petrix,.....1846

They employ 58 hands, whose yearly wages amount to		$21,112
" consume Leads to amount of		2,560
" "	30,000 bushels Coal,	1,500
" "	110 cords Wood,	330
" "	60 tons Straw,	400
" "	Clays to the value of	2,800
Total,		$28,702
They burn ware to the value of		33,850
Capital in ground, machinery, &c.,		13,500

Of these potteries, the "Pennsylvania," Daniel Bennett, is the most extensive, making sixty per cent. of the whole amount burned. He manufactures a very fine article of iron-stone ware, Rockingham and yellow ware, and finds a demand for his articles in advance of his supply.

We would invite the attention of Potters to this point, believing there is to be found here materials that need but skill and capital to build up another large and profitable branch of business.

BRUSH MANUFACTURERS.

There are three manufacturers of brushes in the city, viz:

John Kennedy,	68 Wood,	established 1843, by John Kennedy.
Loughridge & Maxwell,	126 "	" 1853, " L. & Maxwell.
D. Stewart,	26 Fifth,	" 1851, " D. Stewart.

These firms employ 21 hands, whose yearly wages are	$ 7,800
They consume Bristles to amount of	11,000
" " Stocks and Veneers to amount of	1,309
" " Wire, Ferrules, &c., " "	400
Total,	$20,500
They produce 10,000 doz. Brushes, worth	$40,000

BLACKSMITHS' BELLOWS.

There are two manufactories of the above article in this community, viz:

James Lemon & Co.,	No. 96 Fourth street,	Pittsburgh, established by Lemon & Power, 1830
Isaac Williams,	Lacock street,	Allegheny, established 1850

They manufacture $10,000 worth of this article yearly.

SADDLERY AND HARNESS MANUFACTURING.

In this branch of manufactures there are six prominent houses who make up harness and saddlery. Besides these there are a number of shops who work on a very small scale, not keeping more than one journeyman employed, besides the proprietor. Below we give the names of the six houses, and the amount of their business:

Firm.	Location.	Established.	By whom.
C. Barchfield,	10 Diamond,	1849	C. Barchfield.
R. H. Hartley & Co.,	86 Wood,	1834	R. H. Hartley.
A. Holstein,	132 "	1843	A. Holstein.
R. Mackey,	61 Fifth street,	1823	R. Mackey.
Saml. McClurkan,	96 Wood,	1852	McClurkan & Beatty.
Thos. Oliver,	117 Liberty,	1844	Thos. Oliver.

These seven houses employ 106 hands, whose wages amount yearly to	$35,152
They consume Leather to amount of	52,000
" " Hardware "	20,000
" " Dry Goods "	10,400
Total	$117,552
They produce and sell Saddlery and Harness to amount of	146,500

In the smaller shops there are manufactured of those articles $35,000 worth more.

TRUNK MANUFACTORIES.

There are several trunk manufactories, distinct from the saddlery and harness business, viz:

Firm.	Location.	Established.	By whom.
Albert Jones,	182 Wood street,	1855	Albert Jones.
Robert Martin,	116 "	1830	Robt. Martin.
Shorten & Co.,	104 "	1856	Shorten & Co.
A. Tindle,	106 "	1853	A. Tindle.

These employ 36 hands, whose wages amount yearly to	$11,132
Make and sell Trunks to the value of	30,000

Trunks are also made to a large amount and in great variety by the Saddlery and Harness house of R. H. Hartley & Co., No. 86 Wood street, Samuel McClurkan, No. 98 Wood street, and others.

SPRINGFIELD PATENT LEATHER FACTORY.

This establishment, owned and carried on by the firm of J. T. McLaughlin & Co., have their office at No. 127 Wood street. There are manufactured at this factory all descriptions of enameled and patent leather, and they employ 40 hands, whose wages annually are $20,800. They are using at present 1,000 cords of bark yearly, and 100 barrels of varnish. The capacity of the works is equal to 15,000 hides a year, and it is the intention of the proprietors to run them to their full capacity, shortly. They are at present running only half capacity, owing to the high price of green hides, &c. The value of this business we are unable to give in dollars.

HILLSIDE PATENT LEATHER FACTORY.

This is a new establishment just about going into operation, the office of which is 28 St. Clair street, up stairs. The firm is Geo. H. Anderson, and they expect to manufacture largely, not only patent leather, but all the grades of shoe leather. The capacity of the works is equal to 8,000 hides per annum, and when in full operation, will employ 35 hands. Of course as yet this factory has no statistics beyond those given of capacity.

WOOLEN FACTORIES.

There are two woolen factories here, although the business is carried on on a small scale. One is the Allegheny Woolen Factory, C. REEL & Co., corner South Common and North Canal street, Allegheny; the other Arthur's Factory, worked by JAMES ARTHURS, Second street road. The Allegheny was established in 1843. One of them the past year employed eight hands, worked up 20,000 lbs. wool, and wove 200 pairs blankets and 2,000 yards of flannel.

COMBS.

There is a small factory of horn combs in Allegheny City, where a limited amount and variety of dressing and other combs is made by L. Lofink. The factory was established in 1844, but does not turn out over $1,000 worth annually.

ICE CHESTS and WIRE SAFES

Are made quite extensively, by H. T. Price, of Allegheny City, who follows it as an exclusive business. He employs in this business

Six hands, whose wages amount to	$2,496
There is consumed in the business, 50,000 feet of Lumber,	1,000
" " Zinc, Wire Cloth and Nails, to amount of	450
Total,	$3,946

There is made annually at the establishment,

300 Ice Chests and 100 Safes, worth	$4,700

BOBBINS.

This article is made by John Hay, corner Lacock street and Race alley, Allegheny. He employs four hands, whose wages are $1,056, uses maple wood to the amount of $400, and metals to amount of $50. He makes 50,000 bobbins annually, besides other turned work. There is used in the establishment nine turning lathes and one engine, and the machinery is worth $3,000.

CORK DEALER and MANUFACTURER.

There is in the city but one dealer in corks, viz: H. Overington, No. 76 Smithfield street, by whom the business was established in 1853. He sells annually to the amount of 34,000 gross of corks.

BROOM FACTORY.

A factory for the making of corn brooms and wisps is carried on by M'ELROY & Co., corner Ross and Water streets. They consume

sixteen tons of broom corn, 22,400 broom handles, employ five hands, and turn out 1,880 dozens brooms annually.

CHILDREN'S CARRIAGE FACTORY.

An establishment for the manufacture of children's carriages is carried on by S. Kennedy, whose office is No. 62 Wood street. It is the only one of the kind west of the mountains, and although in operation but a short time, the orders for the goods are so large that the hands are pressed to keep pace with them. Every variety of carriages and wagons for children, and of other wooden toys, are constructed. There is also made at the factory an article called "Turkish seats" for parlors and doors, for which a large demand is arising. The establishment employs eight hands, and turns out over 1,000 children's gigs yearly, beside the other articles manufactured.

BOX MANUFACTORIES.

The business of making boxes for the various departments of manufactures, is a noticeable one. Although there are a large number made in the various carpenter shops, &c. throughout the city, yet there are two firms whose exclusive business this is. They are

Point Factory,	Munn & Barton,	Cor. Point alley & Duquesne Way, established by Munn & Steele,	1847
Allegheny do.	John A. Bloomer,	Cor. Anderson & Lacock, Alleg'y. established by John A. Bloomer,	1855

They employ fourteen hands, whose wages amount to	$2,496
" consume 375,000 feet of Boards, to value of	5,625
" " 200 kegs of Nails, " "	800
Total,	$8,921
They make 62,400 Boxes,	12,480

PUMP AND BLOCK MAKERS.

There are two firms engaged in the manufacturing of pumps and blocks for steamboats, and all other articles usual in this line of business. They are

Davage & Roberts,	57 Front,	established 1852, by T. Davage & Co.
Jones & Birkheimer,	35 Water,	" 1843, " Jones & Birkheimer.

These firms employ eleven men, and transact business in their line to amount of $10,000 annually.

TURNERS.

There are, besides several turning establishments which are portions of cabinet shops, six firms which pursue the business of turning disconnected from every other occupation. They are

Thos. Bratt,.....	Cor. Sandusky & Canal,	established 1850,	by Thomas Bratt.
V. & L. Guckert,.....	" Grant and Seventh,	" 1836,	" N. &. V. Guckert.
S. Patterson & Bro...	131 Second,.....	" 1847,	" Sam'l. Allinder.
G. Schroeder & Co...	Birmingham,.....	" 1856,	" G. Schroeder & Co.
C. Seibert & Co.,....	9 Irwin,.....	" 1850,	" C. Seibert & Co.
N. Guckert,.....	Ohio, near East Lane,.....	" 1836,	" N. & V. Guckert.

These employ 41 hands, whose wages amount to.....$17,500
They consume 550,000 feet of Lumber, worth..... 8,000

$25,500
The value of the business is..... 55,000
They keep six engines running, and the machinery employed in the business is worth..... 9,500

ROPE WALKS.

There are carried on here three rope walks, where are manufactured ropes, &c. regularly; beside which there are several small establishments that are fitful in their labors. The three are

F. Baker & Co.....		established 1844,.....	
J. & H. Gerwig,.....	Cor. Penn & Walnut,.....	" 1840,	by J. & H. Gerwig
John Irwin & Sons,..	No. 57 Water,.....	" 1814,	" John Irwin.

These rope walks consume

279 tons of Hemp,.....$27,040.00
203 " Manilla,..... 38,540.00

They make Rope, Cord, Twine, Packing Yarn, &c., to value of.....$117,451.79
They employ 57 hands, whose wages amount to.....$17,784

UPHOLSTERING.

The business of upholstering is carried on by three firms in Pittsburgh, viz:

E. Edmundson & Co.,...	96 & 98 Third street,.....	established 1833,	by E. Edmundson.
Wm. Noble,.....	45 " " ..... "	1833,	" Wm. Noble.
Jacob Seibert,.....	100 " " ..... "	1846,	" Jacob Seibert.

These firms employ about 85 hands, a large proportion of whom are women. The value of the business, so far as we could ascertain, amounts to $70,000.

PIANO MANUFACTURERS and DEALERS.

There are in the city four piano manufacturers and dealers, viz:

C. Blume,.....118 Wood street,.....	established	1843,	by F. Blume.
Herbert Goodall, ..34 Smithfield,.....	"	1850,	" Goodall & Warren.
H. Kleber & Bro.,...53 Fifth,.....	"	1848,	" H. Kleber.
John H. Mellor,.....81 Wood,.....	"	1831,	" John H. Mellor.

Of these firms Herbert Goodall manufactures exclusively. The others are agents for various Eastern factories.

The four firms sell annually 252 Pianos and 50 Melodeons, the value of which is.....	$125,800
They also sell other musical instruments to amount of.....	35,000
Total,.....	$160,800

The establishment of Mr. Goodall being a Pittsburgh manufactory, it is proper some special note should be made of it. Chickerings, Nunns & Clark's, and the Hamburg pianos sold by the other firms, are already famous for their qualities in the musical world. Mr. Goodall has yet a name to gain outside of the city for his, and we have the authority of good judges in saying that in all the requisites of a fine instrument, they are fully equal to those of any maker whatever. For tone and finish we have heard them compared with the best, and the only difference appears to be that the others have the advantage of a reputation, acquired by years pursuance of the business and the expenditure of much money.

The prices of Goodall's pianos are very low in comparison with other makes. We have remarked thus of his pianos, because, as an article of Pittsburgh manufacture, we believed it was our duty to give it prominence.

PHILLIPSVILLE OIL CLOTH FACTORY.

This factory was established in 1838 by the present proprietors, J. & H. Phillips, whose warehouse is at Nos. 26 & 28 St. Clair street. The factory is in the suburbs of the city, near Manchester.

The business of manufacturing floor and furniture oil cloths and window shades is carried on extensively by this firm, rendering necessary a building 120 feet long, 50 feet wide, and 50 feet high, beside out-buildings. The firm employs 20 hands, whose weekly wages are $150. They manufacture from 60,000 to 70,000 yards of floor

oil cloth yearly; also, 6,000 table spreads, and 11,000 yards green window oil cloth, and a variety of other articles of a similar nature.

They run one engine, and consume among other articles, 10,000 bushels coal, $6,000 worth of oils, and $2,000 worth of white lead. Their cloths are sold as low as at any manufactory in the United States. This firm also are heavy dealers in India Rubber goods, made under the Goodyear patent; also leather beltings, curtain trimmings, &c.

GOLD LEAF MANUFACTURING.

This branch of business is prosecuted by JOHN B. DUNLEVY, at No. 132 Third street. The demand for the article is good, and his orders are from parties at a distance as well as from the home trade. Several hands are employed at this establishment, in beating leaf.

The principal business is in the making of gold foil for dental purposes, of which he produces yearly about 600 ounces. Thos. S. Uffington, the first gold-beater in the United States, established the business in New York in 1807, and this factory in Pittsburgh in 1837.

LITHOGRAPHING.

There are two firms in the city who are engaged in the Lithographing business: they are WM. SCHUCHMAN & BRO., corner Third and Market, and KREBS & BRO., corner Fourth and Wood. There is no better work in this line of business done in the United States than is executed here. The demand for the work keeps 12 presses running, and employs a large number of engravers, pressmen, draftsmen, &c. The value of the business we are unable to give.

SURVEYING AND ENGINEERING INSTRUMENTS.

J. R. REED & Co., No. 68 Fifth st., carry on a manufactory of the above named instruments. They employ seven hands, and make instruments to amount of $6,000 a year.

The articles are equal to any made in the country, and when on exhibition in eastern cities, at the Agricultural and Mechanical Fairs, they have frequently taken the prize over eastern competitors.

CHAPTER XXI.

MERCANTILE INTERESTS.

The term "Merchants of Pittsburgh," first occurs in Smollet's History, in a mention of the transactions of Major General Stanwix, at Fort Pitt, in the winter of 1759–60.

From that period the commercial position of Pittsburgh and the activity or dullness of her traffic has been closely linked with the growth of the western country, and the title Pittsburgh Merchant an honorable one in all the great marts of the Union. From vicissitudes which the commerce of Pittsburgh has in common with that of other cities experienced, her merchants have always emerged with renewed vigor and unblemished credit; and it is with pride that our citizens can contemplate the estimation in which the "Merchants of Pittsburgh" are held in all the markets to which they resort.

In 1803, the entire commerce and manufactures of Pittsburgh were summed up at $350,000. Of this, $92,000 was created by what was then termed the "Bartering trade," or, the exchanging of one article of merchandise for another.

In 1808 there were fifty store-keepers or merchants. In 1817 there were 109 stores of various kinds in the city; and in 1836, there were 250 stores, at which time the mercantile business was computed to be $13,100,000; and that of the commission business at $5,875,000, or $18,975,000 in all.

In the days of the pack-horse and the road-wagon, the mercantile business of Pittsburgh increased rapidly, and the city became the resort of wholesale buyers from all sections of the West and South-west. The advent of the rail and the locomotive, caused a revolution in that portion of our trade, and much of it was drawn by the facilities of reaching the East to the Atlantic cities. Unpleasant as the fact is, there is no doubt that the close connection in which the rail roads placed Pittsburgh with New York and Philadelphia, materially injured her wholesale business. From this

perhaps natural and to be expected result, the jobbing trade of Pittsburgh is now recovering, and the infusion of many younger men among her merchants, has given new vigor to her commercial transactions. There is to be remarked in the history of every city, a period when the business of the place languished and declined, caused sometimes by revolutions in the spirit of the trade throughout the country; and at other times, by occurrences purely local. From one of those depressed periods, caused by the change in the mode of transacting the wholesale business all over the Union, brought about by the rail roads, Pittsburgh has emerged, and will again enjoy a large wholesale jobbing trade. The whole argument upon which is founded this belief, it would probably be cumbersome and tiresome to record here. Taking into consideration the fact, that in all particulars the Pittsburgh wholesale merchant stands upon equal footing with those of the Eastern cities, in all the facilities for procuring his stock—buying from, and acting as the agent of, the same manufacturers—importing from the same European sources—paying never more than they for the articles in which he deals, and able from the less expense, to do an equally remunerative business on five per cent. less profit, one point upon which to found this belief is apparent. The fact that the lines of the Pittsburgh rail road system are daily carrying through this point large numbers of western buyers, whose inquiries, prompted by their own interests, into the advantages of purchasing here, will naturally do away with an unjustifiable prejudice which has for some years past existed in many sections of the West against buying in this city, while their reports will advertise in the most effectual manner that between our jobbing houses and those of the Eastern seaboard, there is no other difference than such as results to the disadvantage of the latter from increased cost of traveling expenses, freights, &c., is another of the points which lead to the belief expressed. The soundness of which point is proven by the fact, that within the last three years there is an increase in the amount of the jobbing business done in Pittsburgh, and that this year a better and heavier class of merchants than heretofore have purchased large bills here. In remarking which it is proper to mention yet further, that the fact that those buyers have previously bought in New York and Philadelphia, is conclusive that their judgment and business experience discovered no difference in favor of the Eastern market over Pittsburgh, and that there must have been some advantage in favor

of the latter, to induce the breaking off of old connections to open new accounts here.

All things in prices, terms and other business considerations in purchasing being equal between the two points contrasted, it is at once obvious to the prudent buyer that the advantages already mentioned as belonging expressly to Pittsburgh, for the advantage of lessened expenses and some others also attain to Pittsburgh over western cities seeking the same trade, is sufficient to decide which point is the best.

There is probably no city in the Union where business and living expenses are so small as in Pittsburgh, and a brief consideration of her geographical position and her rail way system will show that there are few cities which offer so great facilities for the transaction of a heavy commercial business.

Another reason for believing that the mercantile business of this city will soon be largely increased in bulk is, that the finishing of some lines of our rail way system now in progress will throw open this point as a market of sale and purchase to several of the South-western States, who could only heretofore approach this city by circuitous and uncertain routes. From those States a new body and class of buyers will in two or three years, or sooner, begin to visit our market in at least a spirit of inquiry; and it will need but the inquiry to convince them that it is as good a one for merchandise as for manufactures.

Another fact is that our wholesale dealers are using greater exertions to bring trade to this city, and the increase already resulting will naturally incite to fresh efforts which will without doubt produce a further increase.

One thing has been of late years, and is now greatly needed, and that is banking capital and facilities. The fact that the large amount of business shown by this volume to be yearly transacted here, is done upon about $4,000,000 of public banking capital, is an evidence of how sorely it is wanted. Could an equal amount of bank capital to that now existing be chartered at this point, there would be a very rapid increase in our commerce, and also in our manufactures. So great is the daily necessity for it, that the want will force its own satisfaction, despite inimical counsels in the Legislative halls.

There is ample room here now for the enterprise and capital of half a dozen new wholesale jobbing dry goods houses, who are willing to do business two or three years upon a small profit to build up a trade; and also for the opening of as many more in various other branches.

The same exertions used, and expenses incurred here yearly as are made and contracted by eastern firms for the creating and securing of trade, would have equal results and ultimately return greater profits.

The position of Pittsburgh as a distributing point, has already been displayed, and there cannot be any doubt upon the ultimate greatness of her commission business. With so largely available means for the reception of the productions and merchandise of both the East and the West, and commanding such routes as are there described, it can be no matter of hesitancy to say that her commission business is destined to a heavy increase.

As a point for transactions in produce the same advantages present themselves as are prominent in her adaptability for commission business, and there is no room for doubt but that capital and exertion would soon render this one of the largest grain and produce markets in the country. The varied and extensive advantages for transportation already recited as possessed by Pittsburgh, gives the facility for reception, while the same channels present avenues for forwarding it to the seaboard either speedily or cheaply and more leisurely.

The tables which in other cities exist in the books of their Boards of Trade, by which the values of the imports and exports of a series of years may be presented and compared, are not to be had in this city. The Merchants' Exchange which organized some two years ago, has never as yet gotten effectually at work to record those statistics within its province which are so valuable for reference. We therefore present only the regular branches of the mercantile business, beginning with

WHOLESALE DRY GOODS.

There are a number of extensive firms in this line of business in the city. They will at all times duplicate the prices of the markets of New York and Philadelphia in their line of goods. The stocks they keep are extensive, well assorted, and judiciously selected. They are at all times prepared to extend to solvent buyers as ample accommodation as the eastern houses. The expense of transacting business in Pittsburgh is trifling to what it is in the eastern cities; and the difference between the personal and business expenses of a dry goods firm in Pittsburgh and one in New York or Philadelphia, is of itself a very pretty profit. This simple fact is one to be considered by the prudent purchaser. The greater the expenses of transacting business and of living, the larger per cent. of profit is necessary to meet such expenses and realize the expected per cent. upon the capital employed; and it is the customer of the jobber who pays these expenses. In firms doing

business to an amount varying from $200,000 to $300,000 yearly, situated in New York, Philadelphia and Pittsburgh, there is a difference of over five per cent. in favor of the latter place in expenses, which saving the Pittsburgh jobber is able and willing to place in the pocket of his customer in the prices of the goods he selects. It is not the intention to here advance facts arguing why western men would find their advantage in buying here; if it were, many of similar bearing could be mentioned, but the one fact advanced is so suggestive in its application that its presentation is natural. There are in this city two classes of dry goods jobbers, one that is strictly wholesale and one that has two departments—a wholesale and a retail. There are of the first class or strictly WHOLESALE HOUSES, 9 firms, viz:

Firm.	Location.	Established.	By whom.
Arbuthnot & Shannon,	115 Wood,	1843,	C. Arbuthnot.
Campbell & Pollock,	95 "	1847,	M'Candless & Campbell.
John Cochrane,	101 "	1853,	Cochrane & Bro.
D. Gregg & Co.,	99 "	1836,	D. Gregg.
Jas. M'Candless & Co,	109 "	1836,	Gordon & Gregg.
A. A. Mason & Co.,	25 Fifth,	1845,	A. A. Mason.
Wm. Payne,	103 Wood,	1843,	Shacklett & Glyde.
Wilson, M'Elroy & Co.,	54 "	1837,	Hampton, Smith & Co.
Wilson, Childs & Co.,	45 "	1852,	Hampton, Wilson & Co.

Of the second class, or WHOLESALE AND RETAIL HOUSES, there are sixteen firms, viz:

Firm.	Location.	Established.	By whom.
Wm. B. Aber,	106 Market,	1856,	Wm. B. Aber.
Brown & Martin,	Cor. Fed. & Dia. Alleg'y.,	1852,	John Brown & Co.
Brooks & Cooper,	75 Market,	1855,	Brooks & Cooper.
Jas D. Brady & Co,	63 "	1855,	Jas. D. Brady & Co.
John Dean & Co.,	Federal near Dia. Alleg'y.	1839,	John Dean.
Samuel Gordon,	" " " "	1843,	Gordon & Rafferty.
W. & D. Hugus,	102 Market,	1837,	John Loyd & Co.
C. Hanson Love,	74 "	1842,	Jacobs & Drucker.
H. J. Lynch,	96 "	1854,	H. J. Lynch.
A. M. Marshall & Co.,	Federal near Dia., Allg'y.,	1836,	A. M. Marshall.
T. T. Myler,	76 Market,	1849,	T. T. Myler.
Murphy & Burchfield,	72 "		Wm. R. Murphy.
M. Mentzer,	94 "	1847,	M. Mentzer.
John Porter,	91 "	1851,	John Porter & Co.
Jos. W. Spencer,	80 "	1821,	Samuel Spencer.
Spence & Co.,	73 "	1850,	M. J. & C. Spencer.
Geo. R. White & Co.,	59 "	1828,	Geo. R. White & Co.

These 25 houses employ 211 hands, and transact business yearly to amount of $2,334,239.50.

In addition to these wholesale houses, there are some 20 houses of an exclusive retail character, whose sales amount to $500,000 more.

HARDWARE.

There are a number of hardware firms here who always keep excellent and extensive stocks. They are prepared to meet customers at any time, upon as accommodating terms as any of the eastern houses; and they make it a standing offer to all who visit this market to duplicate eastern bills, without regard to freights. The wholesale hardware firms of Pittsburgh stand upon the same footing in the procuring of their stocks as the best eastern houses. In all cases the articles come from the same American manufactories, and are imported in the same way from Europe, and at the same cost. There is no reason why the merchant purchasing from the eastern jobber should not do so from the Pittsburgh jobber; and there is the advantage of freights, traveling expenses, time, &c., as a reason why he should purchase at Pittsburgh. There are no better selected stocks to be found in the East than here, and as before stated, the Pittsburgh jobber is prepared and willing to extend as liberal terms to the solvent purchaser as can be had in any city of the seaboard. The same remarks made touching the expenses of transacting business in dry goods, applies equally to the hardware houses, and the position upon which the jobbing houses of Pittsburgh of all kinds stand, may be thus summed up. While in every advantage of procuring their stocks, style, assortment, profuseness, cheapness, &c., they stand equal with the jobbers of any eastern city, they have at all times in the smallness of their expenses, the advantages of five per cent. over the East; which per cent., as previously mentioned, they are willing to give the advantage of to their customers. There are the following firms in the city:

Firm.	Location.	Established.	By whom.
Bown & Tetley,	136 Wood,	1839,	Bown & Tetley.
Beckham & Keefer,	Federal, near Robinson,	1853,	Beckham & Keefer.
Cooper & Lavely,	58 Wood,	1839,	Jas. M. Cooper.
John Cartwright,	86 "	1839,	John Cartwright.
John Dunlap,	Cor. Second & Market,	1839,	John Dunlap.
R. Dunlap, Jr.,	101 Market,	1842,	R. Dunlap, Jr.
Walter F Fahnestock,	247 Liberty,	1845,	Walter F. Fahnestock.
Samuel Fahnestock,	74 Wood,	1855,	S. Fahnestock.
Hays & Getty,	71 Market,	1845,	R. H. Peebles.
Logan & Gregg,	52 Wood,	1831,	Logan & Kennedy.
P. H. Laufman,	86 "	1847	Huber & Laufman.

M'Cutcheon & Lindsay,.Federal near Diamond,..1854,.....M'Cutcheon & Lindsay.
Whitmore, Wolff & Co.,. 50 Wood,.....1836,.....Whitmore & Wolff.
Jas. Woodwell & Co.,.... 35 " .....1847,.....James Woodwell.
Wolf & Lane,.....173 Liberty, ...1847,.....Whitmore & Co.

These 15 houses employ 57 hands, pay $53,183 duty, and import English goods to amount of $181,654. Their sales are $615,000. The most of articles now comprised in a hardware stock are of American manufacture; with the exception of small cutlery and some of the coarser qualities of table cutlery, but few articles are now imported by the hardware merchants, consequently the amount of importations is but small in comparison with former days, when the bulk of a hardware stock was foreign manufactured articles.

BOOTS AND SHOES.

In this business there are several large firms, whose stocks are always well selected, and who purchase from the same manufacturers, and at the same prices as eastern jobbers in this line. The fact that all their advertisements contain a standing offer to duplicate any eastern purchased bill, is evidence of how secure they feel of their ability to compete with the shoe dealers in the cities of the Atlantic coast. There are seven houses which do a wholesale business, viz:

Firm.	Location.	Established.	By whom.
Geo. Albree, Son & Co.,..No.	71 Wood,	1831,	.....Geo. Albree.
H. Childs & Co.,..... "	133 "	1824,	.....H. & A. P. Childs.
R. C. Loomis,..... "	59 "	1842,	.....M'Curdy & Loomis.
Joseph Plummer,..... "	105 "	1843,	.....Joseph Plummer.
J. P. Tanner,..... "	56 "	1822,	.....R. Tanner.
Wm. E. Schmertz & Co., "	107 Market,	1848,	.....Wm. E. Schmertz.
James Robb,..... "	89 "	1833,	.....James Robb.

These 7 wholesale houses employ 40 hands, and sell yearly 13,200 cases of boots and shoes, worth $456,000.

In addition to these there are 25 retail houses, whose sales amount to $150,000 more.

There are also manufactured in this city, for retail and for wholesale sales, over 100,000 pairs of boots and shoes, worth $200,000.

HAT, CAP AND FUR DEALERS AND MANUFACTURERS.

There are nine wholesale and manufacturing houses in this branch of the business of Pittsburgh. To remark upon the inducement they offer to wholesale buyers would be simply to reiterate what has already been said in relation to other branches of the wholesale trade of this city. They enjoy the same advantages of small expenses, good facil-

ities for procuring stock, capital, experience, and ability to offer accommodating terms to their customers. The nine firms are as follows:

Firm.	Location.	Established.	By whom.
Wm. Douglass,	No. 77 Wood,	1825,	Wm Douglass.
Hall & Co.,	" 89 "	1832,	M'Kain & Hall.
Alf. Kevil,	" 163 "	1846,	Alf. Kcevil.
M'Cord & Co.,	" 131 "	1806,	Robert Peebles.
M'Masters & Son,	" 90 Market,	1827,	Wilkinson & M'Masters.
C. W. Moore & Co.,	" 167 Wood,	1856,	C. W. Moore & Co.
C. H. Paulson,	" 73 "	1837,	C. H. Paulson.
E. C. Putnam,	" 119 "	1855,	E. C. Putnam.
S. West,	" 264 Liberty,	1844,	S. West.

These nine firms employ 56 hands, whose wages amount to.....$ 23,960
They make and sell hats, caps and furs yearly, to the amount of.....250,000

In addition to the foregoing firms, there are a number of "shops," that manufacture for their own retail orders, whose production is not taken into the account.

CHINA AND QUEENSWARE DEALERS.

There are four wholesale houses of the above character, viz:

Firm.	Location.	Established.	By whom.
Geo. Breed,	No. 100 Wood street,	1828,	T. J. Gaylord & Co.
John Gill,	" 113 " "		
Henry Higby,	" 122 " "	1835,	Henry Higby.
J. J. O'Leary,	" 81 " "	1853,	J. J. O'Leary.

These firms employ 15 men, and import 2,200 crates of ware, on which they pay $16,500 duties; their sales amount to $75,000 annually.

CLOTHING HOUSES.

There are nine clothing houses doing a wholesale clothing business.

The remarks made in relation to the other branches of the mercantile business of Pittsburgh apply equally well to this branch.

The following are the firms:

Firm.	Location.	Established.	By whom.
M. Arnold & Son,	No. 66 Market,	1852,	M. Arnold & Son.
D. J. Carrol,	" 118 "	1855,	D. J. Carrol.
Z. L. Eisner,	Cor Wood & Fifth,	1848,	Z. L. Eisner.
E Frowenfeld & Bro.,	No. 48 Wood,	1848,	E. Frowenfeld & Bro.
Hampton, Campbell & Co.	" 128 "	1855,	Hampton, Campbell & Co.
Jaroslawski & Bro.,	" 202 Liberty,	1851,	Jaroslawski & Bro.
M. Hanner,	" 62 Market,	1850,	M. Hanner.
J. A. Myler,	" 174 Liberty,	1854,	J. A. Myler.
Morganstern & Bro.,	" 121 Wood,	1846,	Morganstern & Bro.

Of these, two, Messrs. Hampton, Campbell & Co. and E. Frowenfeld & Bro., are exclusively wholesale. The other seven, although transacting a wholesale business have attached to their establishments a retail branch.

These nine houses employ 1,000 hands, mostly women, in manufacturing clothing, whose wages are light. They sell clothing to amount of $600,000.

There are besides these, 45 firms manufacturing clothing exclusively for their own retail sales, which amount to $360,000, and who occasionally sell a wholesale bill. This is exclusive of the merchant tailor establishments, some of which are very elegant, and transact a large business.

DRUG BUSINESS.

There are in the city eleven wholesale druggists and dealers in patent medicines. Six of the eleven are the proprietors of medical preparations of great value as considered either for their medical efficiency, or for their reputation and consequent large sales. Those six are: Fleming Bros., the proprietors of the widely known "M'Lane Medicines;" B. A. Fahnestock & Co., the proprietors of the celebrated "Fahnestock's Vermifuge;" R. E. Sellers & Co., the proprietors of the well-known "Sellers' Liver Pills," "Imperial Cough Syrup," and "Vermifuge." The advertisements of these three houses have, in connection with their medicines, made the name of Pittsburgh known in every section of the Union, the Canadas and South America. Hostetter & Smith, proprietors of their excellent "Stomach Bitters," for which orders are received from even the Sandwich Islands; B. Page, Jr. & Co., patentees of the popular "Bœrhave's Holland Bitters," which are attaining a wonderful sale, especially among the Germans and Hollanders settled in the United States; and Geo. H. Keyser, patentee of the valuable preparation known as "Keyser's Pectoral Syrup." The following are the eleven

Wholesale Druggists and Patent Medicine Dealers.

Firm.	Location.	Established.	Who by.
Braun & Reiter,	167 Liberty,	1835,	Braun & Reiter.
Fleming Bros.,	61 Wood,	1828,	Holmes & Kidd.
B. A. Fahnestock & Co.,	19 "		
John Haft,	Cor. Sixth & Wood,	1853,	John Haft.
Hostetter & Smith,	267 Penn,		Hostetter & Smith.
Geo. H. Keyser,	Cor. Virgin ay. & Wood,		
Nevin, Mackeown & Co.,	165 Liberty,	1825,	John Hanen.
Geo. Ogden,	26 Wood,	1820,	Avery & Ogden.
Benj. Page, Jr. & Co.,	Cor. Third & Smithfield,	1848,	Benj. Page, Jr. & Co.
R. E. Sellers & Co.,	28 Wood,	1840,	R. E. Sellers.
John P. Scott,	296 Liberty,	1842,	Swartz & Scott.

These firms employ 102 hands, and sell annually to the amount of $725,000.

There are in addition a large number of prescription druggists, whose sales are not included in the above estimate, which only exhibits the wholesale business.

In the regular drug line the wholesale druggists have at all times heavy stocks, and stand in all particulars upon as good footing for the transaction of business, as any of the wholesale houses we have mentioned. The advantages we noticed as possessed by those for competing with the Atlantic cities are also held by these.

TRIMMING STORES.

There are two houses whose exclusive business is the sale of dress and bonnet trimmings. They are

Joseph Horne,	77 Market street,	Established 1850,	by J. Horne & Co.
F. Van Gorder,	78 " "	" 1854,	" F. Van Gorder.

These two houses keep large stocks of every variety of trimmings. They employ in the transaction of their business seventeen hands, and their yearly sales of trimmings are $111,000.

DEALERS AND IMPORTERS OF VARIETY GOODS.

There are six wholesale houses of variety goods here, viz:

Firm.	Location.	Established.	By whom.
Casey & Mitchell,	Cor. Wood & Third,	1845,	Casey & Mitchell.
Geo. Kennedy,	72 Wood,	1844,	Geo. W. Kuhn.
Thos. Kennedy, Jr.,	62 "	1847,	Thos. Kennedy, Jr.
W. C. Murphy & Co.,	61 "	1854,	W. C. Murphy.
Wm. Pickersgill,	75 "		
C. Yeager & Co.,	110 Market,	1841,	C. Yeager.

In these establishments will be found fine stocks from which to select, and the same ability to duplicate eastern prices; or in other words, sell as low as at any point in the country. These houses employ 23 hands and sell annually to amount of $284,000.

MANUFACTURING CONFECTIONERIES.

The manufacturing and wholesaling of confectionery is largely carried on here. There are eight manufacturing and wholesale houses in this line of business. The extent to which this business is transacted is evidence that there are strong inducements to purchase in this market. There are the following firms:

Firm.	Location.	Established.	Who by.
J. C. Anderson	136 Wood st	1849	J. C. Anderson.
J. P. Hunker	98 "		J. J. Hunker & Co.
Davis Johnson	23 Smithfield st	1844	Davis Johnson.
G. Parys & Co	187 Liberty st	1846	Benj. Bown.
Reymer & Anderson	39 Wood st	1853	Joshua Rhodes & Co.
H. Rawie	Ohio n E Lane, Al'y.	1852	H. Rawie.
John Shephard	317 Liberty st	1840	J. Shephard.
G. Skinner	203 "	1852	G. Skinner.

These eight firms employ 50 hands whose wages yearly amount to.....$20,800
They use 2,650 barrels sugar, worth..... 79,500

100,300

They manufacture 625,000 pounds candy, worth.....112,500
They also sell 6,000 boxes oranges and lemons, 5,750 boxes raisins, 5,300 boxes figs, 50,000 bushels pea nuts, 1,000 barrels sugar—all of which, with sales of other articles connected with the business, amount to.....167,400
Making the entire value of the wholesale confectionery business.....$279,900

BOOKS AND STATIONERY.

There are ten firms who deal in books and stationery, viz:

Firms.	Location.	Established.	Who by.
J. S. Davison,	61 Market st	1852,	J. S. Davison.
A. H. English & Co.,	79 Wood st	1846,	Elliott & English.
W. A. Gildenfenny,	44½ Fifth,	1841,	R. G. Berford.
W. S. Haven,	31, 33 and 35 Market,	1815,	Wm. Eichbaum
Kay & Co.,	55 Wood,	1830,	J. Kay & Co.
John H. Mellor,	81 "	1843	J. H. Mellor.
H. Miner & Co.,	32 Smithfield,	1845,	E. Miner.
J. L. Read,	84 Fourth st.,		
J. R. Weldin,	63 Wood,	1852,	J. R. Weldin.
T. R. Callender,	Fifth st.,	1856,	T. R. Callender.

These firms employ twenty-nine hands, and sell $255,000 worth of books and stationery. Their stocks of books are large and good, and the assortment of stationery complete and extensive.

JEWELRY AND WATCH BUSINESS.

This business is one usual to all large cities, and of course in this city does not vary in its character from that of other localities. There are fourteen prominent and large jewelry houses, besides a number of a minor character. The fourteen firms are:

Firm	Location.
J. B. Craig,	30 Fifth street.
Dunsith &'Amercin,	38 Diamond Alley.
T. W. Loughrey,	28 Fifth street.
H. Knobel,	35 Diamond Alley
John B. McFadden & Son,	95 Market.

Firm.	Location.
Lewis H. Piaget,	27½ Fifth.
Jas. R. Reed & Co.,	68 "
Reineman & Co.,	42 "
Henry Richardson,	81 Market.
John M. Roberts,	16 Fifth.
John Stevenson,	87 Market.
William Stevenson,	322 Liberty.
R. R. Sinclair,	13 Fifth.
W. W. Wilson,	cor. Market & Fourth.

These fourteen firms sell $375,000 worth of jewelry and watches per annum. There are sixteen firms beside, whose business is of a more limited nature. The sales made yearly by these, amount to over $90,000.

HARDWARE, SADDLERY and CARRIAGE TRIMMINGS.

In this line of business there are two houses who keep heavy stocks, which they are prepared to offer to purchasers as low as any of the Eastern houses. They are:

Firm,	Location.	Established.	Who by.
Leech & Mair,	127 Wood street,	1847,	R. T. Leech, Jr.
McWhinney, Hare, & Co.,	135 "	1856,	McWhinney, Hare & Co.

They employ eleven hands, and sell articles in their line to the amount of $130,000.

IMPORTERS OF TIN AND DEALERS IN METALS.

There are in the city three firms whose business is embodied in the caption above. They are:

Firm.	Location.	Established,	Who by.
John Dunlap,	Cor. Market and Second,	1849,	John Dunlap.
J. S. Leech & Co.,	242 Liberty,	1838,	M. Leech & Co.
Park, McCurdy & Co.,	120 Second,	1816,	Jas. Park.

These firms import and sell 13,000 boxes tin, worth $156,000
They also sell lead, wire, zinc, block tin and Russia iron to the value of 60,000

$216,000

WALL PAPER DEALERS.

In this line of business there are four firms engaged, who at all times keep a fine stock, and are prepared to sell at Eastern prices.

Firm.	Location.	Established.	Who by.
E. Edmondson & Co.,	98 Third st.,	1857,	E. Edmondson & Co.
W. P. Marshall & Co.,	87 Wood,	1827,	Holdship & Brown.
Thos. Palmer,	55 Market,	1840,	McCaskey, Palmer & Co.
J. Shidle,	59 Smithfield,	1827,	J. Shidle.

These four houses employ thirteen hands, and sell wall paper to the amount of $56,000.

LEATHER DEALERS.

There are seven wholesale leather houses in the city, viz:

Firm.	Location.	Established.	Who by.
Walter Bryant & Co.,	239 Liberty,	1830,	W. Bryant & Co.
Richard Bard,	215 "	1843,	Richard Bard.
Wm. Carson,	cor. Ohio & Dia. Alle'y,	1841,	Wm. Carson.
J. Herdman,	96 Wood,	1843,	J. Herdman.
M. De Lange,	233 Liberty,	1852,	M. De Lange.
Wm. Irwin & Son,	34 Diamond Alley,	1833,	Wm. Irwin.
Wilkinson & Hofstott	217 Liberty,	1850,	Wilkinson & Bell.

These seven houses employ thirty-three hands, and sell $252,000 worth of leather annually.

PORK PACKERS.

There are in the city seven pork dealing and packing houses, viz:

Firm.	Location.	Established.	Who by.
Wm. B. Holmes	12 Market,	1837,	Holmes & King.
Hussey & Wells,	235 Liberty,	1845,	C. G. Hussey.
Wm. B. Hays & Co.,	297 "	1850,	Hussey & Hays.
Geo. W. Jackson,	Fourth st., near Liberty,	1825,	G. W. Jackson.
Alex. Laughlin,	cor. Etna and Canal,	1824,	Alex. Laughlin.
Jas. Laughlin,	cor. O'Hara and Pike,	1835,	Jas. Laughlin.
F. Sellers & Co.,	309 Liberty,	1842,	Frank Sellers.

These houses employ two hundred and fifteen hands in the pork packing seasons; kill 47,000 hogs, and make annual sales to the amount of $645,000. The capital in buildings used by them in the prosecution of their business is $90,000.

WHOLESALE STRAW AND MILLINERY GOODS.

There are in this city two establishments of the above description, who keep heavy stocks of articles in that line, and are equally prepared with the other wholesale houses to meet customers upon the best terms, whether of time or prices. They are

John Orr & Co., 93 Market street, Established 1847, by John Orr.
R. H. Palmer, 105 Market street.

These firms employ about 20 hands, and sell merchandise in their line to amount of $108,000.

The wholesale shoe houses also deal to a considerable extent in straw goods, and usually keep good stocks of bonnets and hats.

BONNET MANUFACTORIES.

There are two establishments which make it an especial business to get up bonnets of silk, crape, gauze, linen and other materials espe-

cially for the wholesale trade. These establishments are A. A. Mason & Co., No. 25 Fifth street, and R. H. Palmer, No. 105 Market.

They employ in this business 60 hands, and manufacture bonnets of the description mentioned to the amount of $36,000.

There are in the city the following

RECTIFYERS AND LIQUOR DEALERS.

Firm.	Location.	Established.	By whom.
R. L. Allen.....No.	4 Wood street,.....	1853.....	R. L. Allen.
Robert Bell,..... "	237 Liberty street,.....	1833.....	Robert Bell.
John Bryer & Co., "	155 " "	1836.....	Wm. Anderson.
Wm. Carr & Co.,... "	329 " "	1852.....	Wm. Carr & Co.
R. & A. C. Duncan, "	291 " "	1842.....	Knox & Duncan.
James Donnell,..... "	305 " "	1850.....	James Donnell.
M. Develin & Co.,.. "	63 Smithfield "	1850.....	M. Develin & Co.
H. Darker,..... "	408 Penn "	1856.....	H. Darker.
D. Fickeison,..... "	137 Liberty "	1856.....	D. Fickeison.
J. & T. Grout,..... "	12 Smithfield "	1846.....	P. C. Martin.
D. R. Galway,..... "	339 Liberty "	1847.....	R. Watson & Co.
A. Glockner & Bro, "	32 St. Clair "	1853.....	A. Glockner & Bro.
Honnegger & Co.. "	161 Smithfield "	1851.....	Honnegger & Co.
A. & L. Haustetter, "	494 Penn "	1855.....	A. & L. Haustetter.
——— Johnston,.. "	326 Liberty "	1857.....	——— Johnston.
Jacob Keller,..... "	538 " "	1845.....	M. Krebs.
J. A. Knox & Co., "	287 " "	1849.....	J. A. Knox. & Co.
James Laubie,..... "	27 St. Clair "	1841.....	James Laubie, Sr.
J. Little, Jr., Ag't, "	243 Liberty "	1853.....	Jno. Little, Jr., Agt.
F. Lynch & Co.,... "	346 " "	1853.....	F. Lynch & Co.
W. Mitcheltree & Bro,	209 Liberty "	1827.....	Wm. Mitcheltree.
Miller & Ricketson,	233 " "	1835.....	Wm. Miller.
Robert Moore,..... "	315 " "	1842.....	Robert Moore.
Joseph McIntyre, "	31 Diamond,	1827.....	John Parker.
S. McCrickart,..... "	303 Liberty "	1854.....	S. McCrickart & Co.
J. McCullough & Co.,	165 " "	1856.....	J. M'Cullough & Co.
Jas. H. Parker,.... "	331 " "	1837.....	J. & J. Parker.
S. M. Phillips,..... "	301 " "	1856.....	S. M. Phillips,
Joseph Schmidt... "	409 Penn "	1837.....	Wm. Schmidt.
L. Stern & Co.,..... "	348 Liberty "	1849.....	L. Stern.
Jas. H. Carson & Co.,	12 Wood "	1850.....	Wm. H. Sutton.
Nath'l Sinton,..... "	21 Diamond,	1850.....	N. Sinton.
L. Sahl,..... "	27 Market "	1850.....	L. Sahl.

These 32 firms employ 109 hands and use $7,300 worth charcoal. They sell annually 1,907,960 gallons of whisky, worth $476,990.00, and otheriquors to the amount of $254,900.00.

REAL ESTATE AGENTS.

There are in the city three firms who transact a real estate business. They are—

Firm.	Location.	Established.	By whom.
Blakley & Richey,	cor. Smithfield and 7th streets,		Jas. Blakley.
S. Cuthburt & Son,	No. 51 Market street	1846	S. Cuthburt.
B. McLain & Son	" 58½ Fourth "	1848	B. McLain.

From the peculiar nature of many of their transactions, in which they simply find a purchaser or a seller without carrying the whole transaction through, there is much of their business which does not appear upon their books beyond the simple entry of the fee for such portion of the business as they transact, consequently it is impossible to give the actual figures of their business. Many heavy transactions are commenced by them, in which the parties to the purchase or sale conclude all the particulars and the payments themselves.

FEED STORES.

The sales of hay, corn, chopped stuffs and such articles of horse and cow feed, consequent upon the great number of drays here, have given rise to a number of establishments called feed stores; the principal among which are—

Firm.	Location.	Established.	By whom.
James Boyd,	Diamond, Allegheny	1845	James Boyd.
Curran & Co.,	No. 19 Smithfield st.,	1843	Algeo & Co.
James Dain,	Penn st. and Canal,	1856	James Dain.
S. & J. Corothers,	No. 584 Penn st.,	1849	S. & J. Corothers
Robert Love,	" 10 Wylie st.,		Robert Love.
John McClung	" 8 Hancock st.,		John McClung.
Moreland & Mitchell,	" 576 Penn st.,	1845	Moreland & Mitchell.
Rafferty & Grimes,	" 7 Wylie st.,		Rafferty & Grimes.
Simpson & Nelson	Federal and Canal		Simpson & Nelson.

These nine firms employ 27 hands, and buy and sell

211,000	bushels	mill stuff, worth	$73,850.00
78,000	"	corn "	46,800.00
4,200	"	" meal, "	2,700.00
175,000	"	oats, "	61,250.00
800	tons	hay, "	16,000.00
			$214.900.00

There are, in adddition to these, enough more of a minor character to nearly, if not quite double the above amounts.

THE GROCERY TRADE.

The general tenor of the remarks upon the various branches of the mercantile business, is applicable to this division of the commerce of Pittsburgh. Country dealers have no hesitation in saying, that did no other interest draw them to the eastern cities they would invariably purchase their bills of groceries here—there being no advan-

tage in purchasing East over buying here, and on articles in this line of business the freights create sufficient difference to give this city the preference. The upward movements which we have elsewhere mentioned as going on in the other branches of the wholesale trade, is also perceptible in this. This branch of our commerce was injured as well as other divisions, by the railroads bringing this city so near in time of travel to the East; but reaction has evidently commenced, and we believe, from the same reasons given in the commencement of this chapter for a large increase in the general jobbing business, that the grocery trade of the city will also become yearly heavier and more important. There are the following firms here:

Firm.	Location.	Established.	Who by.
Atwell, Lee & Co.,	No. 8 Wood st.,	1855,	Atwell, Lee & Co.
Bagaley, Cosgrave & Co.,	" 18 & 20 Wood st	1831,	Wm. Bagaley & Co.
Brown & Kirkpatricks,	" 191 & 193 Liberty st.	1849,	Brown & Kirkpatrick.
John Black & Co.,	cor Hand & Duquesne.	1847,	John Black & Co.
Wm. Cooper & Co.,	No. 213 Liberty st.	1838,	Cooper & Young.
A. Culbertson,	" 195 " "	1847,	Brown & Culbertson.
Wm. Carr & Co.,	" 329 " "	1852,	Wm. Carr & Co.
R. Dalzell & Co.,	" 251 " "	1821,	Bailey & Co.
James Dalzell,	" 68 Water "	1826,	James Dalzell.
R. & A. C. Duncan,	" 291 Liberty "	1842,	Knox & Duncan.
English & Richardson,	" 116 Second "	1844,	English & Bennett.
Erwin & Dilworths,	" 144 Water "	1839,	James Richardson.
John Floyd & Co.,	" 228 Liberty "	1834,	John Floyd.
Wm. M. Gormly,	" 271 " "	1815,	Andrew Gormly.
S. George & Co.,	" 289 " "	1825,	A. & S. George.
D. R. Galway,	" 339 " "	1847,	R. Watson & Co.
Wm. Holmes & Co.,	" 20 Market "	1818,	Burgess & Robinson.
E. Heazelton,	" 18 Diamond,	1834,	E. Heazelton.
John I. House & Co.,	cor Smithfield & Water.	1850,	James Benny & Co.
Robert H. King,	No. 211 Liberty st.,	1836,	Wilkinson & King,
Alex. King,	" 273 " "	1843,	Alex. King.
Kirkpatrick & Metzgar,	" 249 " "	1851,	Kirkpatrick & Metzgar
J. S. Leech & Co	" 242 " "	1818,	Malcolm Leech.
Lambert & Shipton,	" 6 Sixth "	1846,	Lambert & Shipton.
S. H. Lucas & Co.,	" 246 Liberty "	1852,	S. H. Lucas.
T. Little & Co.,	" 112 Second "	1853,	T. Little & Co.
Miller & Ricketson,	" 221 Liberty "	1835,	Wm. Miller.
D. T. Morgan & Co.,	" 107 Wood "	1836,	D. T. Morgan.
G. A. Martin,	" 199 Liberty "	1837,	G. A. Martin.
Robt. Moore	" 315 " "	1842,	Robert Moore.
Wm. Mitcheltree & Bro.,	" 209 " "	1834,	W. & M. Mitcheltree.
Mercer & Robinson,	Federal & N. Can. All'y.	1842,	Mercer & Robinson.
John M'Devitt,	No. 311 Liberty st.	1830,	John M'Devitt.
Wm. M'Cutcheon,	" 219 " "	1832,	W. & R. M'Cutcheon.
Henry M'Cullough & Co.	cor. Penn & Irwin	1832,	H. M'Cullough.

Firm.	Location.	Established.	Who by.
M'Candless, Means & Co.,	" Wood & Water	1840,	Cosgrave, Wick & Co.
John M'Gill & Son,	No. 257 Liberty, st	1842,	M'Gill & Bushfield.
M'Clurkan & Herrons,	" 243 " "	1852,	Kirkpatrick & Herron,
J. Painter & Co.,	" 59 " "	1828,	Myers & Painter.
G. Parys & Co.,	" 187 " "	1846,	Benj. Bown.
Ross & M'Combs,	" 13 Diamond	1815,	M. Dalzell.
R. R. Robison & Co.,	" 255 Liberty st	1836,	Irvine & Robinson.
Reis & Berger,	" 25 Smithfield st	1846,	Reis & Berger.
J. A. Renshaw,	" 253 Liberty "	1863,	Bailey & Renshaw.
John Scott & Co.,	" 327 " "	1844,	John Scott & Co.
Wm. H. Smith & Co.,	" 122 Second "	1844,	Irvine & Martin.
Shriver & Dilworth,	" 130 & 132 Second	1848,	J. S. Dilworth & Co.
Watt & Wilson,	" 26 Liberty st	1849,	Watt & Wilson.
Wm. Worsdell, Jr. & Co.,	" ... " "	1856,	Wm. Worsdell.

There are also the following:

PRODUCE AND COMMISSION HOUSES.

Firm.	Location.	Established.	By whom.
Henry H. Collins,	No. 25 Wood st	1852,	Johnson & Collins.
J. B. Canfield,	" 141 & 143 First		J. B. Canfield.
Isaiah Dickey & Co.,	" 80 Water street	1832,	Isaiah Dickey
Joseph Dorrington,	" 59 " "	1842,	Joseph Dorrington.
James A. Fetzer,	" 89 " "	1856,	J. A. Fetzer.
Springer Harbaugh,	" 295 Liberty "	1845,	S. & W. Harbaugh.
Alex. Forsythe,	" 75 Water "	1856,	Forsythe & Scott.
Robert Hutchinson,	" 8 Smithfield "	1856,	Robert Hutchinson.
Alex. Hunter & Co.,	" 299 Liberty "	1852,	Alex. Hunter.
Huffman, M'Creery & Co.,	" 114 Second "	1856,	Huffman, M'C. & Co.
David Herbst,	" 267 Liberty "	1855,	David Herbst.
Chas. B. Leech,	" 116 Second "		Chas. B. Leech.
John Montgomery,	" 118 " "		
James M'Cully & Co.,	" 172 & 174 Wood	1823,	James M'Cully.
M'Bane & Anger,	" 124 Second st	1853,	A. & A. M'Bane.
Peter Peterson,	Fed'l & Robinson,	All'y 1851,	P. Peterson.
Lewis Peterson,	Fed'l & Canal,	" 1854,	L. Peterson.
J. & W. Rea,	No. 75 Water st	1852,	J. & W. Rea.
J. Reppert,	" 6 Smithfield "	1852,	J. Reppert.
Wallace & Gardiner,	" 285 Liberty "	1854,	Wallace & Gardiner.

There are the subjoined

FORWARDING AND COMMISSION HOUSES.

Firm.	Location.	Established.	By whom.
Forsythe & Co.,	60 Water street,	1816,	Cornwell & Dobbin.
Forsythe & Ballard,	58 " "	1847,	Jacob Forsythe.
John Greer,	153 First "	1820,	John Greer.
Alexander Gordon,	121 Second "	1838,	J. G. & A. Gordon.
Jas. A. Hutchison,	156 First "		Lewis Hutchison.
A. A. Hardy,	73 & 75 First	1832,	Moses Atwood.

Firm.	Location.	Established.	By whom.
Jones & Scully,	61 Water st.,	1853,	Jones & Denny.
J. S. Liggett & Co.,	69 & 70 " "	1850,	Bell & Liggett.
M'Bride & Co.,	95 " "	1856,	Nimick & Co.,
Powell & Moody,	97 First "	1839,	J. W. Butler & Bro.

Also these

IRON COMMISSION HOUSES.

Firm.	Location.	Established.	By whom.
H. D. King,	76 Water street,	1855,	H. D. King.
John Moorhead,	27 Wood "	1846,	King & Moorhead.
Nimick & Co.,	95 Water "	1814,	Allen & Grant.
Rhey & Mathews,	80 " "	1847,	Friend, Rhey & Co.

There are also dealing in

WOOL.

Firm.	Location.	Established.	By whom,
Wm. Barker,	72 Smithfield st.,	1824,	Wm. Barker.
Springer Harbaugh,	295 Liberty "	1845,	S. & W. Harbaugh.

And the subjoined

GROCERS AND SHIP CHANDLERS.

Firm.	Location.	Established.	By whom.
Erwin & Dilworths,	144 Water st.,	1839,	James Richardson.
Jones & Cooley,	141 " "	1847,	O. Blackburn.
Long & Duff,	90 " "	1834,	Edward Duff.
Caldwell & Bro.,	88 " "	1840,	G. R. Massey.

These firms employ 340 hands, and sell

38,337	bags of Coffee,	$ 766,740
11,359	hhds. of Sugar,	1,305,685
13,996	barrels Molasses,	349,700
10,639	chests Tea,	250,546
5,944	barrels Oil	297,200
12,046	boxes Tobacco,	240,920
35,300	" country Glass,	123,550
5,224,000	lbs. Bacon and Pork,	522,400
9,325	barrels Fish,	78,600
289,000	" Flour,	1,734,000
3,861	" Refined Sugar,	77,220
18,300	bushels Grass Seeds,	73,200
84,345	tons Pig Iron,	2,531,150
9,060	" Blooms,	724,800
191,000	bushels Rye,	114,600
94,000	" Corn,	28,200
240,300	" Wheat,	320,400
4,000	" Pea Nuts,	6,000
1,759,124	lbs. Lard,	175,922

95,000 bushels Oats,	23,750
100 tons Nitrate Soda,	10,000
668 " Pearls,	100,400
3,200 casks Soda Ash,	160,000
382,000 lbs. Butter,	38,200
41,000 bushels Barley,	61,500
360,000 lbs. Leaf Tobacco,	54,000
80 tons Hemp,	16,000
2,500 barrels Rosin,	8,750
500 " Tar,	2,500
3,890,000 lbs. Cheese,	234,400
13,200 bushels Dried Fruit,	26,400
900,000 lbs. Wool,	360,000
2,896 barrels Hydraulic Cement,	5,792
17,000 " Whisky,	170,000
600 tons German Clay,	10,200
500 bags Saltpetre,	4,500
34,000 lbs. Hops,	5,760
609 bushels Flax Seed,	7,050
165 tons Anthracite,	1,650
42,800 lbs. Buckwheat Flour,	1,284
4,000 tons Magnetic Ore,	40,000
$25,000 worth of Lead Pipe,	25,000
$25,000 " " Pig Lead,	25,000
General Groceries, to amount of	1,312,000
Total,	$12,433,974

These returns, especially in the articles of produce, cannot be considered as full or final of the business embraced in the classes of business represented by the firms given.

There are many heavy retail grocery houses in the city whose stocks are bought exclusively in the East, some of whom sell $100,000 worth of goods. The retail stores in the grocery line number over 100, whose sales range from $100,000 to $10,000, making an aggregate of $1,000,000. In addition there are a large number of small retail grocery stores of which we make no mention whatever. There are four Transportation and Commission houses viz:

Geo. Bingham & Co.,	853 Liberty,	Established	1838, by Wm. Bingham.
Keir & Mitchell,	345 "	"	1834, " S. M. Keir.
Leech & Co.,	Cor. Water & Liberty,	"	
Lloyd & Co.,	" Penn & Canal	"	1856, " Lemon & Lloyd.

These houses, from the value of their business, have no statistics other than that of men, boats, horses, &c. employed, and tons of freight transported.

Three of the four are engaged principally in transporting goods by canal, the other, Leech & Co., are the special agents for through freights of the Pennsylvania Central, and the Pittsburgh, Ft. Wayne and Chicago Rail Road.

The three canal houses employ over 500 men, 96 boats, 250 horses, mules, &c. The value of the horses, mules, boats, &c., is $83,400. The amount of freight carried East in the last year, which was from low water a slack one, amounted to about 28,000 tons, and carried West to over 26,500.

There are the following

CARPET WAREHOUSES.

W. M'Clintock,	112 Market,	Established 1836,	by W. M'Clintock.
W. D. & H. M'Callum,	87 Fourth,	"	....., " W. M'Callum.
Robinson & Co.,	23 Fifth,	"	..... " .....

These three establishments employ 14 hands, and sell $125,000 worth of carpets yearly, and about $10,000 worth of oil cloths. Of the above amount, about $15,000 are importations, on which between $6,000 and $7,000 duties are paid.

There are two

AUCTION AND COMMISSION HOUSES.

P. M. Davis,	No. 54 Fifth street,	Established 1843,	by J. D. Davis.
Wm. G. M'Cartney,	" 125 Wood "	" 1851,	" W. G. M'Cartney.

These two houses do a general auction business. We can only approximate to the value of their sales, which are between $300,000 and $400,000.

PRINTING.

"The art preservative of all arts," is well represented in the city of Pittsburgh. There are published daily the following papers:

Papers.	Published by.	Established.	Circulation. Daily.	Weekly.
Chronicle,	Kennedy, M'Knight & Co.,	1841,	2,160	3,424
Dispatch,	Foster & Fleeson,	1846,	8,000	6,000
Gazette,	S. Riddle & Co.,	1786,	1,800	5,000
Journal,	R. M. Riddle,	1843,		
Post,	James P. Barr,	1796,	1,125	3,150
Reporter,	Wm. Evans & Co.,	1856,	1,700	
Union,	John H. Bailey & Co.,			
Courier, (German,)	J. G. Backofen,			
Freund, (German,)	L. & W. Neeb,	1833,		
Democrat, (German,)	Victor Scriba,			
Republican, (German,)	L. W. Kolkenbeck,	1854,	1,200	1,500

There are also published a number of weekly papers and monthly periodicals, some of which have a very large circulation.

JOB PRINTING

Is largely carried on by the following firms:

Firm.	Location.	Estab'd.	By whom.
A. A. Anderson,	Cor. Fourth & Market,	1836,	Anderson & Loomis.
Barr & Myers,	" Fifth & Wood,	1842,	Phillips & Smith.
Wm. S. Haven,	" Second & Market,	1816,	Eichbaum & Johnston.
John H. Bailey & Co.,	" Fifth & Smithfield,	1850,	Daily Union.
Samuel M'Donald,	" Third & Market,	1855,	Samuel M'Donald.
James M'Millan,	" Fifth & Wood,	1851,	James M'Millan.
R. M. Riddle,	Journal Building,	1854,	R. M. Riddle.
Singerly & Myers,	Dispatch Building,	1841,	Whitney, Dumars & Co.
John T. Shryock,	Gazette Building,	1847,	M'Millan & Shryock.
Backofen & Bauer, (Ger.)	" "		
L. & W. Neeb, (Ger.)	Dispatch Building,		

Of the above Job Offices,

	Machine Presses.	Hand Presses.	Employs Hands.
A. A. Anderson, has	1	1	4
Barr & Myers,	1	2	6
W. S. Haven,	10	4	80
J. H. Bailey & Co.,	1	1	5
Samuel M'Donald,	1	1	3
James M'Millan,	3	1	6
R. M. Riddle,	4	4	12
Singerly & Myers,	4	2	10
John T. Shryock,	2	2	12

The value of the material in these twelve Job Offices is upwards of $120,000. The amount of work turned out we are unable to give. One of the above firms, W. S. Haven, carries on also the Stereotyping business.

CHAPTER XXII.

COST OF LIVING, WAGES, &C.

On page 49 of this volume it is instanced as one of the manufacturing advantages of the place, that the cost of living to workmen is less than in most cities of the Union. A brief exposition of the cost and comfort of living here will be made in this chapter.

The rent of dwellings is, among the mechanical classes, a subject of serious consideration. Here in Pittsburgh this is not the case. Comfortable two-story brick houses with good kitchens, having hot and cold water, sometimes bath rooms, built with double parlors,

and having two and three bed rooms, besides an attic story or garret are to be had on well paved gas-lighted streets in various sections of Pittsburgh and Allegheny, for $10 to $11 per month. Other houses equally comfortable, but with less room by perhaps one parlor and one sleeping room, for from $6 to $8 per month. On the outskirts of the city, to which omnibuses run in several directions, cheerful, airy residences, with garden room, can be had even less, if of the smaller proportions; or at from $7 to $8 where quite roomy. This cheapness of rent is one of the causes to which may be attributed the health of this location, as shown in Chapter VIII, the necessity thereby being obviated of crowding together in one house several families, as is so generally the case in the eastern and western cities, to cheapen rent. It is not necessary that this chapter should contain a schedule of styles of houses and their various rents; those instanced as charged for small houses of comfortable proportions in the previous paragraphs are sufficient for the mechanics and laborers to make comparisons with in other cities.

Fuel is in some cities almost as great an object of consideration to those whose income is of a limited character, as house rents. Here in Pittsburgh it is a matter of minor consideration. The cost of keeping up a fire is about $10 a year. Not one of those economic air-tight stove arrangements rendering a room gloomy, while it poisons the air, but a big roaring, crackling, blazing fire, caused by the combustion of a whole grate full of fine bituminous coal, which gives in its burning, to the fire, much of the character of the cheerful wood fires of old, and enlivens while it thoroughly warms the room.

Marketing is also generally low; until the last year, when meat and vegetables have, from sundry special causes, been higher than usual, the prices of marketing have ranged thus: Beef, 8@9 cts. ℔ lb.; veal, 8 cts ; pork, about 8 cts.; mutton, 7@8 cts.; chickens, 25@31 cts. ℔ pair; turkeys, from 50 cts. to $1, according to size; ducks, 40 to 50 cts. a pair; and vegetables are equally reasonable. The average price of flour for the past ten years, as taken from the books of the largest flour house in the city, was $5.25 ℔ bbl.

In groceries, sugar could, previous to this year, when the failure of the sugar crops has raised the price of the article all over the country, be purchased for 7@9 cts. by the single pound, and something less by the 50 or 100 lb. keg. Teas, molasses, coffee, candles, soap, spices, and all the entire list of articles consumed in housekeeping, equally low.

This brief mention of the leading expenses of house-keeping is sufficient to afford those who so desire an opportunity of comparing the cost of living in Pittsburgh with that of other cities.

To the prices of labor in the various mechanical occupations, a few paragraphs is devoted.

Skilled labor in all the branches of manufacturing carried on in this city finds ready employment, and wages range as follows:

In iron rolling mills puddlers get $4.50 a ton; heaters, 70 cents a ton; rollers, $1,62 a ton; they finding all the assisting hands. Rolling in Guide Mill, the roller gets from $3.00 up to $12 per ton according to size; he finds all hands necessary for rolling, heating, &c. Nail makers get from 25 cents to $1.50 a keg. In forges, hammermen get $3.00 a day; heaters, $2.00. In steel works, converters finding their own help get $3.00 per ton; axle turners from $9.00 to $12.00 per week; spring makers work by the piece and hire their own assistants, and it depends entirely upon the amount of springs they turn out what their wages are; but from $9.00 to $15.00 per week is the usual rate. Cast steel melters wages range from $10.00 to $12.00 per ton.

In iron foundries, moulders average about $10.00 per week; laborers about $1.00 a day.

In machine shops, the turners, filers and fitters make from $6.00 to $11.00, according to ability.

In brass foundries, moulders get $8.00 per week; brass finishers from $8.00 to $9.00 per week; gas fitters from $8.00 to $9.00 per week.

In glass houses, the workmen's wages range thus: in window houses, blowers get $90; cutters, $75; flatteners, $90; packers, $80; founders, $70; laborers, $20; box makers, $35; boys, (assistants) $30 per month. In vial houses, blowers, $75; boys, (assistants) of 8 to 10 years, $10; founders, $70; packers, $45; laborers, $20; box makers, $35 per month. In flint glass houses, blowers make $18; pressmen, $10; boys, $2.75; packers, $7.50; mould makers, $12; cutters, $14, and other hands, $7 per week.

In coal works, miners make about 2 cents a bushel; boys, $1 per day; men laboring, $1.25; men siding boats, $1.50; caulkers, $1.75 per day.

Blacksmith's wages average from $1 to $1.75 per day, according to ability. Carpenters, $1.50 to $1.75 per day. Masons, $1.75 per day. Plasterers, $1.50 per day. Painters, $1.75 per day. Coach and Wagon makers, $1.50 per day. Saddlers, $8 to $10 per week. Tinners, from $7 to $10 per week, according to skill. Copper smiths, from $8 to $10 per week. Laboring hands from 75 cents to $1 per day.

CHAPTER XXIII.

FINANCIAL INSTITUTIONS.

The exhibit of the business of Pittsburgh, presented in the foregoing chapters, would be incomplete if some glimpse were not afforded of the financial institutions of the city.

The first Bank established here was a branch of the bank of Pennsylvania, which commenced business on the first day of January 1804, in a stone building on the east side of Second street, between Market and Ferry. In 1845 the building was still there; but it was, with many other land-marks, destroyed by the fire of April 10th, 1845.

There are now in the city four Banks of issue, viz: Bank of Pittsburgh, Merchants and Manufacturers Bank, Exchange Bank, and Mechanics Bank.

The oldest is

THE BANK OF PITTSBURGH.

Capital Stock, $1,200,000.

This Bank originated from the Pittsburgh Manufacturing Company, which commenced business in June, 1812, without a charter, and was succeeded by the present Bank of Pittsburgh, which was chartered 1813-14 with a capital of $600,000; and organized for business November 22d, 1814. The previous day the following named gentlemen were elected Directors: Wm. Wilkins, George Anshutz, Jr., Thomas Cromwell, Nicholas Cunningham, John Darragh, William Hays, Wm. M'Candless, James Morrison, John M. Snowden, Craig Ritchie, George Allison, James Brown, and J. P. Skelton. On the 28th of November of 1814, Wm. Wilkins was chosen President, and Alexander Johnstone, Jr., Cashier of the Bank.

In 1834 the capital of the Bank was increased to $1,200,000. William Wilkins was succeeded in the Presidency by John Darragh, who was followed by John M'Donald, and Mr. M'Donald by Wm. H. Denny, who was in April, 1835, succeeded by John Graham, who still retains the office of President.

In 1832, John Snyder succeeded Alexander Johnstone in the office

of Cashier, which office he held until April, 1857, when he resigned, and was followed by John Harper, Esq., a gentleman who succeeds Mr. Snyder not only in his office, but also in the confidence of the public, having been connected with the Bank for twenty-five years, in the responsible offices of Chief Clerk and assistant Cashier.

In 1839, when the Banks of this State, with most of the Banks in other States, suspended specie payments, the Board of Directors of the Bank of Pittsburgh resolved unanimously to continue to pay specie on all liabilities of the Institution, which act the Bank carried out, and was triumphantly sustained by the public.

The deposits of this Bank have always been exceedingly heavy, and the dividends have rated for several years at from 4 to 5 per cent. semi-annually, besides which they have accumulated a Contingent Fund of $120,000.

The second in age is

THE MERCHANTS AND MANUFACTURERS BANK.

President, THOMAS SCOTT. Cashier, W. H. DENNY.

Capital Stock, $600,000.

Chartered in 1833. Charter extended in 1848 for ten years.

This Bank has accumulated a Surplus Fund of $150,000, besides paying regular semi-annual dividends averaging five per cent.

The third in point of age is

THE EXCHANGE BANK OF PITTSBURGH.

Chartered in 1836. *Capital Stock*, $1,000,000.

Its officers are THOMAS M. HOWE, President, and HENRY M. MURRAY, Cashier. Both of these gentlemen have been many years connected with the Institution; the latter, formerly the Chief Clerk, having succeeded his brother, James B. Murray, as Cashier, in November, 1856.

This is one of our most successful institutions. Its dividends to Stockholders have ranged from eight to ten per cent. per annum; besides which it has accumulated a Contingent Fund of $130,000.

It is especially note-worthy of this Bank, as also of the Bank of Pittsburgh, and the Merchants and Manufacturers Bank, that at the last general suspension of specie payments, which occurred in 1841, involving the Banks of the whole country south of New York, these three Institutions continued the payment of coin. We note it as indicative of good management, and a degree of stability calculated to inspire the utmost confidence on the part of the public.

The youngest, and fourth in point of age, is the

MECHANICS' BANK OF PITTSBURGH.

Chartered in 1855. *Capital Stock* $500,000.

REUBEN MILLER, President. GEO. D. McGREW, Cashier.

This Bank has been in operation now nearly two years, and during that time has declared regular semi-annual dividends of 4 per cent. The persons in whom are vested the Directorship and the management of the Bank, have the entire confidence of our citizens; and the stock, whose par value is $50, is now selling at $59, which fact is a strong indication of the estimation in which the institution is held.

There are also the following Banks of Deposit and Discount:

Farmers Deposit Bank.
Pittsburgh Trust Company.
Ciitizens Deposit Bank.
Commercial Bank.
Dollar Savings Bank.
Allegheny Savings Bank.
Mechanics Savings Fund Company.
Merchants and Farmers Bank.
Manchester Savings Fund Company.

The Farmers Deposit Bank of Pittsburgh was incorporated in 1833, under the name of the Pittsburgh Saving Fund Company. It was re-chartered in 1843 under the title first given. Its capital is now $62,500, but the charter permits of its extension to $500,000. At the present time, JAMES MARSHALL is President of the Institution, and JOHN MAGOFFIN is Cashier. The deposits average $450,000. Its line of discount is over $400,000. It has a contingent fund of $50,000. The dividends, previous to last year, averaged from 10 to 12 per cent.; last year the dividend was 26 per cent. To instance the admirable management of this bank, we may state the fact, that in their whole amount of discounts from 1833 to the present time, the loss has been but $100, and even that amount is suspended debt rather than a loss.

The Citizens Deposit Bank was organized as a chartered Company in April, 1853, with a capital of $200,000, now all paid in. At the first election of officers, in September, 1853, OLIVER BLACKBURN was elected President; and in January, 1854, E. D. JONES was chosen Cashier. The two gentlemen named still remain in office. A bill granting this bank power to change its name to the "Citizens Bank," and increase its capital to $500,000, with privilege to issue notes, passed both houses of the Pennsylvania Legislature during the ses-

sion of 1857. The deposits of this bank average about $250,000. Its line of discount ranges close to $400,000.

The Pittsburgh Trust Company was organized as a chartered Company in July, 1852. The capital stock is $200,000, all paid in. This is simply a bank of discount and deposit. The deposit accounts in this bank average $600,000. Their aggregate of discounts is between $2,000,000 and $3,000,000 yearly. On the organization of this Company, in 1852, JAMES LAUGHLIN was elected President, and JOHN D. SCULLY, Cashier, which gentlemen still continue in office. During the five years this Institution has been in business, it has accumulated a contingent fund of between $60,000 and $70,000, besides paying the stockholders an annual dividend varying from 10 to 12 per cent. The management of this institution has, as will be seen by the above facts, been a happy one for the stockholders. It also occupies the position of what is termed a currency bank, receiving on deposit the notes of banks in every section of the Union, and paying them out again on depositors' checks, or sending them home as occasion offers and as is deemed expedient. Filling, in this character, the intermediate space between the private bankers and the banks of issue, it has obtained a firm hold upon the confidence of the public, which is well deserved, as its policy has been not only to benefit the Stockholders, but the business community generally.

COMMERCIAL BANK.

Organized 1856. *Capital Stock*, $100,000.

THOMPSON BELL, President. DAVID ROBINSON, Cashier.

This Bank is similar in its character to the other discount and deposit Banks.

THE DOLLAR SAVINGS BANK

Was chartered April, 1855. It is purely a Savings Institution, and has now, in the second year of its organization, April 18th, 1857, $81,017 31, on deposit.

It has been open 548 working days, and the whole amount of deposits during that time amount to $124,768 40; and the number of persons depositing that sum were 986, being an average each day of $227 68.

On its organization, GEORGE ALBREE was elected President, and C. A. COLTON, Treasurer and Secretary, which gentlemen are still the officers of the Institution.

This Bank declares a regular dividend of six per cent. per annum. payable twice a year.

There are also a number of institutions partaking of the character of a Savings Bank, known as Loan Associations, whose stock is payable in weekly or monthly installments of so much per share: the payments continuing until the amount paid in reaches a certain sum, when the Association is declared closed, and the funds divided to the Stockholders. This period is hastened by the accumulation of interest and bonus paid by the borrowers of the money thus paid in, which is sold to the highest bidder, for various periods, at each day of sale, which is monthly or oftener, the successful bidder giving such security for its payment when due, as is satisfactory to a Board of Directors.

So far, these institutions have been very successful, and have made much money for their Stockholders.

There are also in the city the subjoined Private Bankers:

Firm.	Location	Established.	Who by.
George E. Arnold & Co.,	No. 74 Fourth st,	1850,	George E. Arnold & Co.
Arthurs, Rodgers & Co.,	" 57 Smithfield "	1854,	Arthurs, Rodgers & Co.
Harris & Co.,	cor. Fifth & Market,	1848,	Cook & Harris.
Hanna, Hart & Co.,	cor. Third & Wood,	1846,	Hussey, Hanna & Co.
W. A. Herron & Co.,	" Sixth & "	1855,	W. A. Herron & Co.,
Hill & Co.,	" Wood & Fifth,	1845,	Hill & Curry.
N. Holmes & Sons,	No. 57 Market st.,	1826,	N. Holmes.
S. Jones & Co.,	cor. Fourth & Wood	1837,	E. Sibbett & Co.
Kramer & Rahm,	" Third & Wood,	1841,	Allen Kramer.
O'Connor, Bro. & Co	No. 15 Wood st.,	1851,	O'Connor, Bro. & Co.
R. Patrick & Co.,	cor. Fifth & Wood	1851,	Patricks & Friend.
William H. Williams & Co.,	" Third & "	1848,	W. H. Williams.
John Woods,	No. 67 Fourth st.,	1852,	John Woods.

The foregoing specified public Banks and private Bankers compose the financial institutions of the city.

It will be noticed that the aggregate capital of the Banks of issue falls short, including that of the "Citizens Deposit," of $4,000,000; and including the capital stock of the Pittsburgh Trust Co. and the Farmers Deposit Bank, does not exceed this sum; and the entire capital of all the Banks of Issue, Banks of Deposit, Savings Banks, and Private Bankers does not reach $6,000,000. It is problematical if in the entire country there is a community of the same extent, and as largely engaged in business as is shown by this volume to be the case, who transact their business with so extremely limited an amount of banking capital.

The stability of our Public Banks, as instanced in their continuation of specie payment in the midst of a general suspension: the heavy Contingent Fund accumulated by them, after paying regular

and large dividends, renders useless any laudatory expressions upon their character: and those facts with that that upon the amount of capital of public and private Bankers before instanced, there is done so heavy an annual amount of business, renders unnecessary any further financial statistics. The story of the business ability of our citizens, and the financial acumen of our capitalists, is best told by the foregoing facts, which need no words to adorn them or to enhance their value.

CHAPTER XXIV.

PROGRESSIONAL RATIO.

In closing the account of our manufactures and our commerce, there is a fact as to the growth of Pittsburgh which should not be omitted. That is, the manner in which her population has kept pace with the increase of that of the western country, now occupied by the fourteen States and two territories, through, along, and to whose borders Pittsburgh has navigation, as shown in Chapter III; and also the ratio of increase of our manufactures by the same index; demonstrating what we have in previous chapters stated, that although Pittsburgh was from her earliest days a centre for western trade, yet the steam boat, the rail road, and all other modern improvements in transportation and in conveyance of individuals, have not only served to increase the population and the business of Pittsburgh in the same proportion as the western country increased in its wants and its population, but have enabled her to compouud upon such a side-by-side progress.

In 1800 the population of the territory alluded to in the foregoing paragraph was 385,647, and that of Pittsburgh was 1,565, or a little over $\frac{4}{10}$ per cent. The value of her business was $350,000 in 1803, or $91\frac{2}{10}$ per cent.

In 1810, there were in that territory, 1,075,531 inhabitants, and in Pittsburgh 4,768, or $\frac{9}{20}$ per cent., being $\frac{1}{20}$ per cent. of an increase over the necessary increase to preserve the progressive ratio.

The amount of the business was, as by estimates given, over $1,000,000, which sum was equal to 93 per cent. on the amount of the population of the whole West and South-west.

In 1820 the census gives the population of the section of country designated at 2,541,552, and that of Pittsburgh at 7,248, or, not quite $\frac{3}{10}$ per cent., exhibiting at this period of time, when as already remarked, the business of the city was in a ruined condition, a falling off from a proportionate increase.

The manufactures were valued three years previous, (1817,) at $2,266,366, being a fraction short of 90 per cent., showing a small falling off from the former ratio.

In 1830 there were in the same section of the Union 3,331,298 inhabitants, and in Pittsburgh, 16,988, being $\frac{5}{10}$ per cent., evidencing not only a corresponding increase in the population of the West and that of the city as in 1800 and 1810, but a gain of $\frac{1}{10}$ per cent. on the number necessary to keep pace.

For 1830 there is no record of the value of the manufacture and commerce of the city, so no comparison can be instituted.

In 1840 there were 5,173,949 inhabitants in the western and south-western States and the population of Pittsburgh was 38,931, being $\frac{15}{20}$ per cent, showing a gain of not only the required per cent. to maintain the ratio with the per cent. of the previous ten years, but an increase of $\frac{5}{20}$ per cent. For this year also we have no account of the manufactures and business of the city; but four years previous, (1836,) it was estimated at $31,146,550, being something over 600 per cent. or $6 *per capita;* showing that the business of the city had not only kept pace with the population of the West as shown by previous ratios, but had compounded thereon over 500 per cent.

In 1850 the population of the section of the Union under consideration was 8,419,179, and that of Pittsburgh was 79,873, being $\frac{19}{20}$ per cent., exhibiting not only a corresponding gain with the previous ten years, which gain was in advance of the per cent. necessary to indicate an increase in the population of the city in keeping with the increase of the population of the West, but $\frac{4}{20}$ per cent. increase over the necessary per cent. and $\frac{1}{20}$ per cent. over the advance of 1840.

In 1850 the value of the business of Pittsburgh, both commercial and manufacturing, was estimated at $50,000,000, which is about the same ratio of 600 per cent., as in 1840.

For 1857 we have no census data. Estimating that the population of the West has increased in the proportion of the previous ten years, there is in the western and south-western States, to which

the calculations apply, 13,301,293. The population of Pittsburgh as given for 1857, in the seventh chapter of this book, is 138,534, being $1\frac{1}{20}$ per cent. showing for the fourth time not only the ratio of increase in population necessary to keep pace with the West and South-west and her own ratio for the previous ten years, but an increase over that necessary ratio of $\frac{2}{20}$ per cent.

The manufactures and mercantile business of the city for 1856, as founded upon the transactions of that year, indicate, as will be seen in the pages of this volume, the same ratio of 600 per cent., or $6 for each person of the 13,301,293 population. The per cent. of manufactures and business required to have kept pace from 1810 to 1857 with the increase of population in the West, was about 100 per cent., or $1 of manufactures for each inhabitant of the section of country on whose increase is founded these calculations, and the ratio of population about $\frac{5}{10}$ per cent. on the number of that of the West. Instead we find that the ratio of increase in business and manufactures is five and six times the required amount, and the increase of population two to three times what was necessary to prove that Pittsburgh increased as fast in proportion as the whole western country—meaning thereby the States and territories subject to the river navigation of Pittsburgh.

The foregoing figures have been given to prove not only that Pittsburgh increased in proportion to the West, but that in manufactures and in commerce she advanced six times as rapidly as her proper ratio required, and in population two to three times.

Arguments have been advanced in several chapters of this volume to demonstrate the value of Pittsburgh as a location, from many of her advantages; and the inducements there consequently were for capital, mercantile ability and mechanical skill to settle here, and reap the harvest by their labor; and in this chapter is shown by another method, the strength, vitality, progressiveness, and accumulative powers of the city.

That the West, which is yearly growing more and more populous, wealthy and politically powerful, will continue for many coming years to increase in the same ratio as heretofore, no one disputes; and the West is the chief market of Pittsburgh. It is not, however, asked that the capitalist, the merchant, and the mechanic should settle in Pittsburgh, because the West is expanding rapidly and being the chief customer of our manufacturers and our merchants. It is presumable that our manufacturing interests and our commerce

will naturally keep pace in proportionate ratios with the demands of this enlarging market. But it is stated that no better location can be found for capital, skill, and ability, because the population of the city is increasing three times faster than is requisite to keep step with the enlarging territory she works for, and the manufactures and the commerce six times more rapidly than is necessary to show our community a prosperous one, because she progresses neck-and-neck in business and population with the expansion of the western and south-western States and territories.

A careful consideration of our geographical and mineralogical position, our manufacturing advantages, our health, our population and our iron and coal resources will not fail to show that we have those abilities which will continue to keep our ratio of progress in all things at the present figures, and give margin for a strong belief that we shall largely increase upon it.

More could hardly be asked in reason by a settler than that the city he was choosing for the scene of his labors, should give evidence of having increased in business and all things consequent in proportion with the expansion of the territory to which she looked for buyers and a market, and that she should also have evidence of ability to continue to maintain such an increase. The past of Pittsburgh demonstrates to those who would settle in her limits, that she not only progresses in accordance with such a reasonable demand, but that she advances as has been shown and stated, six times as rapidly as is thereby required; and the consideration of the previous chapters of this volume will show conclusively that she has the resources not only to maintain her rate of increase, but also to advance largely thereon. We ask a serious consideration of these facts by all interested.

CHAPTER XXV.

SOCIETY, ART, EDUCATION, &c.

There are many matters of interest relating to the city of Pittsburgh untold in the preceding pages. The object in preparing its statistics, has been merely to give the figures of our manufacturing, and of our leading wholesale and export business.

In what might be termed the retail and home business of this city, there is an amount of capital employed which would foot up heavily, and the figures created by the sales in that line will compare handsomely with those of any city of its population in the Union.

This little volume has already overrun the size to which it was at first intended to limit it, and to, perhaps, a future volume is left the presentation of several subjects, interesting alike to our own and other communities. The figures given in this volume are believed to be those of moderation, not of any spirit of vain boasting. It has been the wish of the author, and will be his pride, if so, to have presented fairly, and yet with all due justice, the claims of this community to be ranked among the more progressive ones of the country—and its right, from its past history and its present advantages, to claim more than a passing attention and examination from the capitalist, the merchant and the mechanic.

In the aspect presented by the statistics of this volume, of a bustling, thriving, industrious community, it must not be supposed that all the more elegant accompaniments of cities are banished from this The society will be found to possess great refinement and high culture, accompanied with a plain, honest hospitality which soon endears to the stranger this location as a home. Did our pages permit, we could dwell quite lengthily upon the intelligence, reading, physical and mental culture of our people: the comforts and pleasures of the location: the opportunities for education: for the enjoyment of religious beliefs: and the gratification of literary and artistical tastes; but beyond a brief mention of some, we must refrain. There are in the community whose business is given, over 20 public schools, whose course of study is very thorough, beside two high schools where the

studies of the student are of the highest grade; and in addition there are a number of private academies of a high reputation, conducted by gentlemen of fine acquirements. The Western University, a permanently endowed, and a chartered institution, is also located here.

There are also two Commercial Colleges—"Duff's," Peter Duff, Principal, and the "Iron City," F. W. Jenkins, Principal, in both of which a thorough course of Book-Keeping, Writing, and other studies necessary for the competent book-keeper to understand, are gone through with.

There are also nearly 100 churches, of the various religious beliefs.

There are three Public Libraries: "The Young Men's Mercantile Association;" "The Young Men's Christian Association," and "The Anderson." A number of fine Halls are frequently occupied by all the public celebrities in the Musical, Dramatic and Literary world for Concerts, Readings and Lectures. We possess artists of great talent and genius, in all the walks of art. In Landscape painting we have in Wall, Lawman, and Hetzell—artists who are not, we think, surpassed in their line by any in the country; and we have seen pictures from their easels which we have no hesitation in saying are equal to many whose composers are supposed to lead the profession. In Historical painting, our fellow-citizen, Trevor McClurg, is eminent, several of whose historical pieces, executed in Europe and in this his native city, are of a high order of merit. In Blythe we possess an artist of rare merit, from the ability with which he delineates humorous interiors and other kindred subjects, and we doubt if, for general humor, exquisite powers of delineating character, and forcible handling of his subjects, there is his superior in any city. In Portrait painting there are several resident artists, of whose ability the city has reason to feel proud, among whom Forester, Rhoads and McClurg are perhaps the best known to fame. In Music, although we have no great number of professionals, there is in our private musical circles a large amount of ability and talent. Stephen C. Foster, the celebrated composer of "Maggie by my Side," "Uncle Ned," "Come where my love lies dreaming," "Old Dog Tray," "Lilly Dale," "Wait for the Wagon," "Nelly Bly," and many other extremely popular melodies, is also a native resident of this city.

The Drama is well understood and properly appreciated, although there is but one theater here. Those celebrities of the stage who find the most remunerative audiences, are those possessing genius as well as talent, and whose rendition of the various dramatic authors are marked by study and careful conception.

In the comforts of a city this community is well supplied. The streets and sidewalks are paved for miles in every direction. Two extensive Water works distribute the pure sweet water of the Allegheny throughout the two cities, and three Gas works supply, through over thirty miles of pipe, the finest of gas to the cities and some of the boroughs, and arrangements are making for the formation of a fourth company for its manufacture.

There are a number of excellent hotels of various capacities. The three principal of which are the Monongahela, the St. Charles, and the St. Clair.

Of these, the Monongahela, John M'D. Crossan, proprietor, ranks not only as the most prominent in the city, but has a reputation among travelers, which justifies us in saying it is also one of the principal hotels of the country. Its location is in the heart of the business portion of the city. Situated upon the banks of the Monongahela river, it commands a view of the Monongahela and Ohio rivers, with their fleet of steamboats, and affords fine views of the beautiful hills which rise in most every direction around the city. The house is five stories high, built in a hollow square, 120 by 160 feet, and has ample accommodations for 400 people. It is furnished equally well with the best hotels of the country, and its table is second to none.

The proprietor of the house has a farm of ninety acres, where are raised the vegetables and fruits used in the hotel, and whence it receives its milk and cream. This hotel was opened under the same management in 1840. Destroyed in 1845 by the fire of April 10th, it was rebuilt in one year, and has been in successful operation ever since.

The St. Charles, located at the corner of Wood and Third streets, also in the heart of business, was opened in 1846. It occupies a space of 85 feet on Wood street by 150 feet on Third, from whence it runs through on the back wing to Second street, 160 feet. It has accommodations for 250 people without crowding, and is handsomely furnished. Under the present management, Messrs. Bryson & Shirls, the reputation of the house has been fully sustained as that of a well kept, comfortable hotel.

The St. Clair Hotel, formerly the well known Exchange, is now managed under the proprietorship of Wm. C. Connelly, formerly of the Merchants. It is situated at the corner of St. Clair and Penn streets, and is convenient to all portions of the business district. It occupies 80 feet on St. Clair by 120 on Penn street, with a back wing running an equal length. It has ample accommodations for 150

people, and is furnished and kept in excellent style and manner, equal to the famous Exchange in its palmiest days.

In addition to these three, there are the "Perry," "Mansion," "Eagle," "Scotts," all of which are well kept houses of less style, suited to those whose incomes demand more moderate board bills.

Much is said of our smoke and consequent disagreeabilities, yet it should be remembered there is not a city without some drawback, and when the smoke complained of results in wealth, progress and health, it can easily be put up with, the more especially as a walk of from ten to fifteen minutes brings the pedestrian out on high grounds, beyond the smoke and its consequent annoyances.

In concluding, the author claims further the attention of the public to merely say, that although a visitor in most sections of the Union, and in the principal cities, and familiar in many, he has yet to see the location he would prefer to Pittsburgh for a home.